Railway Age

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Indexes to Volume 77

THE indexes to the last volume of the *Railway Age* are now ready for distribution and will be sent upon request to those who are not already on the permanent mailing list for indexes.

What Are You Getting for Your Maintenance Labor Expenditure?

IN spite of the fact that it is the practice of many roads to reduce their maintenance of way forces to the minimum at this season, it is probable that the loss due to the inefficient application of these forces on lines in the northern part of the country approaches if it does not exceed that of the summer. Some of this loss is due to adverse weather conditions and may, therefore, be considered as inevitable, although analysis will show that the proportion of the time so lost is far less than commonly believed. The larger part of this loss is due to a general letdown in supervision because of the prevailing belief that little constructive work can be done because it is winter. This attitude is changing, although the change is not proceeding as fast as conditions warrant. Not a few roads have found that the winter is not a constant succession of blizzards, but that the periods of extreme weather are relatively infrequent and of limited duration and that the number of good working days far exceeds the stormy ones. The problem of employment in storms is not one of securing an adequate return from labor, but rather that of securing a sufficient number of men who are willing to work. It is on the more favorable days that the losses sometimes occur because of the lack of a constructive program of work and of adequate direction of the men by division officers, supervisors and foremen. We have repeatedly urged the importance of giving more attention to the distribution of maintenance of way work more uniformly throughout the year as an aid in the stabilization of forces. Before that can be done, it is necessary that maintenance officers demonstrate their ability to keep the forces now employed engaged in constructive work throughout the season of bad weather.

Are You Going to London in June?

RAILROAD men from this continent should be well represented at the International Railway Congress which meets in London this June. The war and the paralysis which it inflicted upon the railways of many countries is receding farther and farther into the past. Railroad systems the world over are earning more money than they did a few years ago. The work of railroad development and improvement is again in almost every country being vigorously pursued. This continent saw nothing in the way of marking time or even retrogressing by its railroads such as other less fortunate countries witnessed. Yet, it must be admitted that, even here, there was a decided slowing up in the pace of progress. Government operation and the lean years which followed it are not likely to be looked back upon fondly by anyone. Happily, however, the past two years have given promise of better times. The railroads have come back strong. Many improvements have been undertaken and others are under way. A high level of efficiency has been reached, so that there is little danger but that the railways will be able to meet adequately all demands for their services. Railways of other countries of the world, speaking generally, as was indicated in the series of articles on foreign railways published in the Annual Statistical Number of the *Railway Age* last week, have in the past year or two had similar experience. Is not the time, therefore, most auspicious for railroad men the world over to congregate, get acquainted with one another and share with each other their successes, their problems and their plans for the future? In our opinion the railroad men of this continent who can possibly spare the time—and more can spare the time now than at any other time during the past ten years—will find attendance at the London Congress most profitable for themselves and their companies as well. It is not too early now to make definite plans for the trip in June.

What Were the Results?

RESULTS are always what count. Therefore it is important that railroad mechanical and other officers who have installed modern labor-saving machinery and equipment check up to see whether the anticipated savings have materialized. They should do this for their own information and satisfaction, but particularly in order that the actual results may be brought to the attention of the higher officers who approved the original authorities for expenditure. If the results are found to have fulfilled the expectations of the mechanical officer's figures and his judgment will have been vindicated, the next time he asks for new equipment it will be provided with less hesitation. On the other hand, if the saving has not been effected, the officer making the original recommendation should know this fact. How many times has a master mechanic succeeded in obtaining new ash handling machinery, or a coal elevator, and yet the superintendent of motive power has failed to see any appreciable difference in monthly labor costs at the terminal? A shop superintendent installs a new car wheel lathe and that is the last heard of it. Did it cut down costs and increase output in the wheel shop? If so, how much? Are not railway executives in charge of the purse strings justified in feeling skeptical regarding anticipated savings from new equipment when they fail to see tangible results from the last new equipment installed? In the past the *Railway Age* has strongly advocated that railway mechanical officers in need of modern equipment and facilities for the efficient operation of railway shops and engine terminals make a thorough canvass of the situation

and present to their management's conservative, convincing estimates of the savings which may be expected. It is equally important that subsequent figures be compiled showing as nearly as practicable the extent to which the new equipment fulfills those expectations.

The Gooding Bill—A Revolutionary Measure

THE Gooding bill is a bill introduced in Congress by Senator Gooding of Idaho the real purpose of which is to make it impossible for the railways to make lower rates from eastern points of origin to the Pacific Coast than they make to intermediate communities. The actual effect of its passage would be to so amend the Interstate Commerce Act as largely to deprive the Interstate Commerce Commission of the authority now possessed by it to determine and fix reasonable and non-discriminatory rates throughout the entire United States.

The present Interstate Commerce Act prohibits railways from making lower rates for longer than for shorter hauls except when and where the Commission determines that it is just, reasonable and in the public interest to do so. The Gooding bill would virtually deprive the Commission of all authority to make exceptions to the long and short haul rule.

To persons who have never broadly studied business and transportation conditions or the way that railway rates have been and are now made, it seems only fair and reasonable that railways should be absolutely prohibited from making any rate that is higher for a shorter than for a longer distance. Nevertheless, such legislation would largely revolutionize present schedules of rates throughout the country and cause changes and disturbances of business conditions of the most serious kind and magnitude.

The Gooding bill is an attempt to bring something about which it long has been feared government regulation would lead to. This is, direct regulation of rates by Congress. When the regulation of railroads by the federal government was begun it was recognized by a majority of the members of Congress that Congress was not a fit body directly to regulate railroad rates. It did not have, and has not now, the necessary time, special knowledge or freedom from political influence. Therefore Congress created the Interstate Commerce Commission to deal with the subject—a body which it was expected would have expert knowledge, be free from political influences and could devote most of its time to the task. The Gooding bill is the expression of an opinion by its author and those who support it that the Interstate Commerce Commission has not performed intelligently and wisely the duty of regulating rates; that Congress can perform this duty more intelligently and wisely than the Commission, and that therefore Congress should establish the rule that virtually under no circumstances shall the long and short haul principle be departed from regardless of what the Commission thinks should be done.

There are thus raised several questions of vital importance. One is this: If Congress is to take from the Commission and itself exercise this particular kind of authority with respect to the regulation of rates, how long will it be before Congress will by direct legislation regulate rates in many other ways?

The real force behind the Gooding bill is political influence which is being brought to bear by people and public men in the western inter-mountain states. But political influence is also being brought to bear by traveling salesmen to secure legislation for the abolition of the Pullman surcharge. It is being brought to bear to secure legislation to bring about special reductions in the rates upon certain classes, or all classes, of farm products. It is obvious that if political influence is successful in getting Congress directly to regulate rates in one way it may be successful in getting Congress directly to regulate rates in other ways; and presently we shall have presented the spectacle of all rates being regulated directly by Congress under political pressure.

When that time comes the present machinery and policy of regulation will be destroyed. Men of ability and self-respect will not serve on the Commission if it is to be reduced from its present estate to an automaton for registering political decrees of Congress.

Most persons, including apparently Senator Gooding and the supporters of his bill, have no conception of the revolution in rates throughout the country that would be caused by the passage of this bill. The Senate passed it at its last session apparently without those voting for it having even a faint idea of the effects its enactment would produce. The Interstate Commerce Commision on March 19, 1924, sent to the Senate Committee on Interstate Commerce a long letter opposing the bill. The Commission has been studying and dealing with the question of long and short haul rates for many years. It knows how important and difficult the problem is. In its letter the Commission reviewed past legislation regarding the long and short haul section of the Interstate Commerce Act and its rulings regarding and administration of this part of the act. It gave under seven headings the important reasons why it has, from time to time, not merely in the west but throughout the country, authorized lower rates to be made for longer than for shorter hauls. These reasons related to cases (1) where a line has a more circuitous route than a competing line; (2) where rail lines are in competition with water carriers; (3) where there is commercial or market competition, as where a carrier serving a section whose products are in competition with those of other sections desires to establish rates to a common market which will enable producers on its line to compete in that market with producers in other sections; (4) where carriers in poor financial condition whose cost of operation, due to conditions beyond their control, are unusually high desire to meet the competition of stronger lines whose traffic, operating and financial conditions are more favorable; (5) where carriers operate under disadvantages due to conditions other than circuity of line, as, for example, where carriers forming a joint route are in competition with a carrier having a single line haul between competitive points; (6) where emergency situations exist due to drought, flood or other abnormal conditions; (7) where carriers desire to meet competition between different ports.

The Commission repeatedly pointed out in its letter how and why destruction of its authority to make exceptions to the long and short haul principle in these various circumstances would be destructive of the best interests of the carriers and the producers and shippers whom they serve.

Congress created the Commission as its expert to inform it regarding such matters and to deal with the problems presented by them. Apparently its letter was disregarded by a majority of the members of the Senate Committee and a majority of the members of the Senate. Apparently they were unable to think of anything except the competition between the transcontinental railways and inter-coastal vessels using the Panama canal. Formerly the railways made lower rates to the Pacific

coast than to intermediate points, such as Spokane and Salt Lake City. Since the war under the Commission's administration of the law they have been allowed to make rates to the coast only as low as to intermediate points, but recently they applied for authority to make lower rates to the coast on a limited number of commodities. The intermediate communities immediately rose up in arms, and thus started the trouble which has caused the introduction of the Gooding bill.

One charge which has been made against the western railways is that they are seeking to destroy competition by the Panama canal route. The reverse is true. What they are trying to do is to prevent their own destruction by the competition of the Panama canal route. From 1920 to 1923 the westbound tonnage passing through the Panama canal to Pacific Coast points increased from 296,000 tons to 1,548,000 tons, or over 400 per cent. Meantime the westbound strictly transcontinental business of the western railways declined almost one-half. All the railways running westward from Chicago are suffering severely from this loss of business, and they are greatly concerned because the loss promises to become constantly greater. Their managers know that no adjustment of rates ever will be made which will enable them to stop business from moving by the canal. All they ask or hope for is some adjustment which will enable them to get a larger part of this business than they are getting now.

The opposition of intermediate communities such as Spokane and Salt Lake City to the making of lower rail rates to the Pacific Coast is based upon the ground that this would discriminate unfairly against them. But the discrimination against them already exists. It is accomplished by the making of low rates by the steamship lines. It would be no greater if the railways were permitted to make rates that would enable them to meet the present rates of the steamship lines.

The intermediate communities answer that if the railways should reduce their rates to the Pacific Coast and in consequence begin to compete more successfully with the steamship lines the water carriers would reduce their rates and thus make the discrimination against intermediate communities greater than it is now. It seems probable this is what would occur.

What, then, is the remedy? To pass the Gooding bill and demoralize all the railway rates and business of the United States? That would not solve the problem of the intermediate communities, because the steamship rates to the Pacific Coast would still be lower than the railway rates to the intermediate communities. The real solution is to pass legislation putting the rates of the water carriers through the Panama canal under the regulation and control of the Interstate Commerce Commission. Only vessels flying the American flag can carry freight between two or more ports of the United States. In passing through the Panama canal they use a waterway constructed with money furnished by all the people of the United States. Why should they be allowed to make any rates that they see fit without any government control or supervision while the rates of the competing United States railways are not only regulated but actually fixed by the Interstate Commerce Commission?

One of the purposes for which the Panama canal was built was to promote competition between water and rail carriers. How can it promote such competition if the rates of the railways are to be so fixed that the railways cannot compete? It is declared by the Transportation Act that one of its purposes is to maintain both water and rail transportation in full strength and vigor. How can this be done if the water carriers are to be left free to make any rates they see fit while the railways are to be prohibited from meeting the rates they make with the result that the water carriers will get all the competitive business?

Ever since their return to private operation the railways in western territory have been earning much less than a fair return. The western lines could increase the net return earned by them if rates were so regulated as to enable them to get more transcontinental freight business.

If they are not to be allowed to get the added net return that would be earned by them in this way, then they ought to be allowed to make a general advance of all their rates except those to the Pacific Coast. They are entitled to earn a fair return; they are not earning it now, and sooner or later they must be allowed to earn it, even if this involves an advance in all their rates that are not directly affected by water competition.

Operating Efficiency

IT is, of course, when freight business is large that the railways have the best opportunity to make the best records of operating efficiency in handling it. The freight business of October was the largest of any single month in history, and it is interesting to find how many new high records of operating efficiency were made in that month.

The average number of freight cars moved per freight train was 43.8. This is the largest figure ever reported, the highest previously reported being that of 43.3 for September. The average number of tons of freight handled per freight train was 770. This was a new record figure, the previous record of 762 tons having been made in August, 1920, when total freight business was the largest until October of this year.

The "density of traffic" was the greatest in history. On the average 5,926 ton-miles of freight service were rendered on each mile of railroad, as compared with 5,917 in August, 1920. The average miles traveled by each freight car daily was 30.7 miles. This record has never been exceeded and was never equalled except in October, 1923.

While the total freight business handled was larger than in October, 1923, the increased efficiency with which it was handled resulted in reductions in the number of miles that locomotives and freight trains were run. In October, 1923, locomotives were run a total of 65,973,000 miles and freight trains were run 58,492,000 miles. In handling the larger business in October, 1924, locomotives were run only 62,910,000 miles and freight trains only 55,952,000. In October, 1924, the number of freight locomotives owned by the railways was only 153 more than in October, 1923, which shows that old locomotives were retired almost as fast during the year as new ones were put in service. But the new locomotives were better and locomotives were more efficiently utilized, and in October of this year the average number of freight locomotives in storage was 3,219 as compared with 1,865 in October, 1923. The average number of freight cars on line (including those owned by private car companies) was 48,643 greater than in October, 1924, and the average number stored was 46,257 greater.

When the increases in operating efficiency that are constantly being made are pointed out some persons show a tendency to infer that operating efficiency in the past was not what it should have been. This proves they have no idea of the almost innumerable means that must be used on each railroad and on the railroads as a whole

to secure constantly improving results. First, the investment of new capital is required. The success the railroads have had within recent years in increasing the average number of cars and the average tonnage handled in each train, and at the same time maintaining and actually increasing the average speed of trains, has been largely due to the acquisition of improved and more powerful locomotives, which could not have been acquired without the investment of capital. Again, the assembling of cars so as to increase the number of cars moved in each train without so holding cars at terminals as to reduce the average miles traveled by them daily, requires the constant study and adoption of improved methods and vigilant and incessant supervision by operating officers of all ranks. There is nothing accidental or fortuitous about any increase in the operating efficiency of a railroad. It is never secured except by careful planning, by the raising and investment of new capital where it is needed, and by the constant effort and co-operation of the operating officers and employees.

There still remains much that can be done to increase the efficiency of operation, but such results as were gained in October show that these things will be done if railway managers and officers are given a chance.

Meeting the Other Fellow Half Way

ANY railroad with a rapidly growing business is constantly discovering new foci of congestion, points where the increasing traffic is taxing the capacity of the facilities. Naturally, such limiting conditions give rise in time to improvement projects designed to correct them. But it often happens that these points of stricture occur in congested terminals where any plan for improvement will entail expenditures entirely out of proportion to the advantages to be obtained. It becomes necessary, therefore, to look for relief in other directions.

One factor to be considered in such studies is the divided ownership of railway property in large cities. Through the exercise of individual initiative by the independent carriers, the larger American cities embrace exceedingly intricate networks of railway tracks with even greater complications as to ownership, joint use, trackage rights, etc. One railway officer who has given a large amount of time to studies of the obstacles to transportation on the line by which he is employed, has reached the conclusion that much could be done to increase the traffic handling capacities of the railway properties in large cities if the managements would take a more favorable attitude toward proposals for the sharing of facilities, the exchange of trackage rights, or the lease of one another's properties. This does not imply the development of involved plans for the unified ownership and operation of terminals but for the joint use of individual portions of the terminal facilities where studies show that common use would afford greater traffic capacity. This suggestion is in no sense novel, it simply means a freer utilization of measures occasionally adopted. The road taking the initiative in such plans usually has a hard row to hoe. Having taken the initiative, it is presumed that it is sorely in need of that for which it asks and that it is only necessary to delay in order to force better terms from it. It is recognized that each road must protect its own property rights in conducting negotiations of this kind. But is not the question to be raised in such cases often not, "how much will we get out of this," but "will it improve our facilities?"

Books and Articles of Special Interest to Railroaders

(Compiled by Elizabeth Cullen, Reference Librarian, Bureau of Railway Economics, Washington, D. C.)

Books and Pamphlets

An Address by L. F. Loree, President, The Delaware & Hudson Company at the Christening of D. & H. Locomotive "1400," *the Horatio Allen at Colonie, New York, December* 4, 1924. Also contains biographical sketch of Horatio Allen, with picture and descriptions of locomotives he purchased for the D. & H. Co. in 1829 compared with locomotive of 1924. 11 p. illus. Publisher not given, but probably available from the Delaware & Hudson Co., New York City.

Financial and Business Survey and Forecast, 1924-1925, compiled by New York Evening Post. Its Section 2, January 2, 1925. 16 railroad executives discuss probable conditions in 1925. 64 pages. Pub. by New York Evening Post, New York City.

Freight Traffic Red Book, 1925 *edition,* compiled by H. G. Williams and C. J. Fagg. A reference book. 624 p. and map of freight classification and rate territories. Pub. by Traffic Pub. Co., New York City. $6.00.

The Invisible Woman, by Herbert Quick. His third novel on Iowa history, in which Iowa railroad history is presented. 488 p. Pub. by Bobbs-Merrill, Indianapolis, Ind. $2.00.

Our Harbors and Inland Waterways, by Francis A. Collins. Historical development, railroad competition, list of canals and cost, etc. 295 p. Pub. by Century Co., New York. $2.00.

Report on the Railway System of Nigeria, by Lieut.-Col. F. D. Hammond. 203 p. maps, charts. Pub. by Crown Agents for the Colonies, London, Eng. 5 shillings.

Periodical Articles

The Economics of the Dawes Report and the London Agreement, by C. W. Guillebaud. Author believes that experts were "extremely optimistic in their forecasts of revenue." Economic Journal [London], December, 1924, p. 540-555.

Every Worker a Capitalist, by D. F. Houston. Table showing ownership of 18 railroads and other industries in period 1880-1904 and 1923-1924, p. 277. World's Work, January, 1925, p. 273-280.

The Incidence of Costs, by Thomas N. Carver. "This discussion starts with the proposition that the incidence of freight rates, taxes [etc.], including wage advances, present the same fundamental problem in many variable forms," p. 576. Economic ournal [London], December, 1924, p. 576-588.

Preparing and Loading Automobiles for Shipment, by B. R. Moore. Loading, bracing, etc., for rail shipment. Jour. of Soc. of Auto. Engrs., December, 1924.

The Railways of France, by Charles F. Speare. Present conditions. Review of Reviews, January, 1925.

Rescuing the Perishables, by Anne Pierce. The work of Dr. M. E. Pennington for food conservation, and preservation of perishables in transit. Field illustrated, January, 1925, p. 10, 16-18, 46-48.

Traffic Density Best Test of Railroad Bond Values. . . . Study of Union Pacific From This Point View . . . by William M. Meredith. Annalist, December 29, 1924, p. 702-703.

Who Owns the Railroads? by Edmund A. Whitman. "There are multitudes of owners of railroad securities, but that they own the railroads is a complete misconception of the facts." p. 85. Scribner's, January, 1925. p. 85-92.

Construction Was Completed Along the East Side of the Right of Way First—Old Station at the Left

Railroad Provides Facilities for Football Crowds

Illinois Central station at Champaign is designed to handle heavy college game traffic

By O. T. Dunn
Resident Engineer, Illinois Central, Champaign, Ill.

CHAMPAIGN, Ill., and Urbana, located 128 miles south of Chicago on the main line of the Illinois Central, include within their borders the University of Illinois, with 1,300 acres of campus and farms, 95 buildings, a two million dollar memorial stadium and 10,000 students and comprise for at least 10 months of the year a community of 30,000 people. The problem of transportation within the two cities comprises the handling of crowds varying from a few hundred people during the usual week-end visits to the nearly seventy thousand who attend the "Home Coming" football games. The conditions thus imposed call for facilities for handling enormous crowds within short periods of time. The stadium, with a seating capacity of 67,000, can be emptied in ten minutes, which means that provision in the way of approaches and streets in the immediate neighborhood of the stadium must be sufficient to allow a crowd of this size to move steadily, without long or serious stops and delays that would cause congestion.

The handling of such a large crowd of people together with some twelve thousand automobiles, which such an occasion attracts, requires the co-operation of the two city governments, the university authorities and the railroads, all parties making every effort to provide the special facilities required to facilitate the rapid handling of the peak crowds which gather at least once each year. The Illinois Central handles the greater part of the out of town crowds and has been required to operate as many as twenty 14-car trains between Chicago and Champaign, 80 per cent of which arrive at the University town within four hours time or one every 15 min., and leave after the games on a similar schedule.

Existing Facilities Inadequate

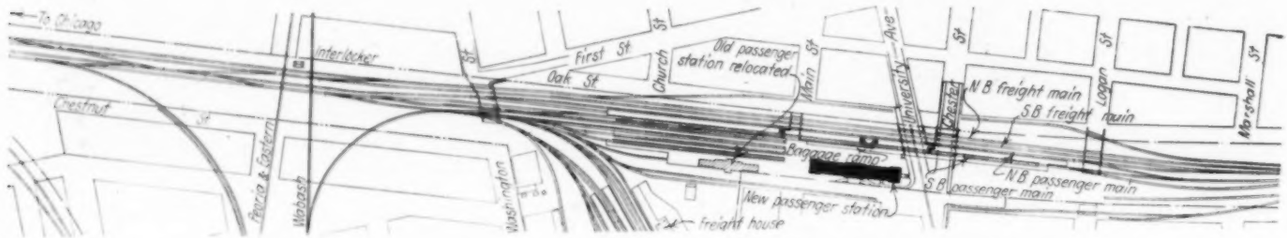
The original track plan at Champaign consisted of two main tracks with necessary side and industry tracks on the same level as the streets, with four street crossings at grade and three street crossings under the tracks at subways with depressed street approaches. The grade crossings were protected by watchmen with gates and the necessary mechanical equipment for the safety of the vehicles and pedestrians passing along these streets, but crossing conditions were very unsatisfactory on account of frequent delays due to the passing of long freight trains. The old station was a one-story brick building located west of the tracks between University avenue and Main street, and at periods of maximum demand in recent years proved entirely inadequate for the handling of the business with comfort and safety to the general public.

After several conferences of the city authorities, a citizens committee and representatives of the railroad it was decided that the railroad would elevate its tracks through the City of Champaign for a total distance of 2¼ miles, construct six new concrete subways, extend and elevate the three existing subways to meet the requirements of the new plan and construct a new passenger station on the site of the old building. The City of Champaign agreed to meet half the cost of four of the new subways by a bond issue of $150,000. The street railway company was required to pay an additional $35,000 to be

applied to the cost of the subway at University avenue which was built for street cars using this street.

The new elevation begins north of the Peoria & Eastern and the Wabash railroad crossings and extends southward for a distance of 2¼ miles. With the exception of a grade of 1.1 per cent against southbound trains for a distance of about 500 ft. the required elevation of the tracks was obtained with grades not exceeding 0.6 per cent against southbound trains and 0.4 per cent against northbound trains.

One new subway is located at the Cemetery road at the south end of the elevation, one at the Stadium driveway and another at Springfield street, with a double subway at Chester street and University avenue, adjacent to the new station. The old subways at Green, Logan and Washington streets were raised and extended as needed.



North End of the Track Elevation and Site of the Champaign Passenger Station

Elevation Accommodates Four Tracks

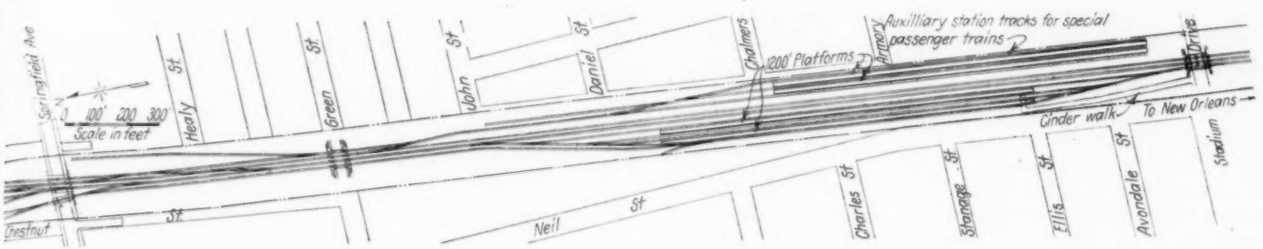
The new elevation provides for two passenger main tracks with a platform 17½ ft. wide between and two freight main tracks from Springfield street north, located along the east edge of the 200-ft. right of way, with the new passenger station and express facilities on the west line of the right of way north of University avenue. The required headroom at the several subways was obtained by raising the tracks as outlined above and by depressing the streets. A vertical clearance of 12 ft. was provided at all subways except University avenue, where the clearance is 15 ft. to accommodate large interurban cars and the standard freight equipment handled by the traction company over the street railway tracks. The street approaches to the subways have 42-ft. driveways paved with brick having an asphalt binder.

The new subways consist of heavy reinforced concrete substructures with slabs of steel I-beams encased in concrete for the floor system at all streets except Springfield street where they are standard reinforced concrete slabs three feet thick. The I-beams spans with 20 and 24-in. beams were used to gain headroom and save the extra depth in depressing the streets. In every case except at Cemetery road, the new subways comprise four slab spans, the three intermediate supports consisting of reinforced concrete bents, one in the middle of the street and one on each curb line. These provide two driveways, each 20 ft. wide with 10-ft. and 12-ft. sidewalks on each side of the street. The subways contain a total of 11,750 cu. yd. of concrete.

One of the old subways, the old four-track through girder bridge at Green street, was raised 5½ ft. The alinement at this point remaining the same, the two abutments were built up and extended to meet the new grade. As the floor systems of this bridge were riveted together it was necessary to raise the entire bridge under traffic. This was done by making a raise of one foot at a time with necessary run-offs for the tracks each side of the bridge, between trains. After the bridge was raised for the full lift it was carried on blocking on the old abutments until the new concrete work could be completed. This was completed under one track at a time as the traffic was shifted from that track to another to allow for the removal of the blocking and the building of the forms and the placing of the new concrete.

The New Passenger Station at Champaign

At Logan street the old abutments were extended to the east to provide for three sets of deck girders, 52½ ft. long carrying floor slabs for three of the new main tracks across this street. An industry track also crosses this street on a through girder bridge of 57-ft. span; the grade of this track being seven feet below the grade of the main tracks at this point. At Washington street the old concrete abutments were extended to the east to carry a double-track, through-girder bridge, one girder of which is 62 ft. 10 in. long and the other 78 ft. 7½ in. long. This was necessary on account of an offset in the street at this point. A street intersection close to the east track requires a retaining wall at right angles to the south abutment to retain the earth fill on railroad property. At Springfield street an industry track west of the main tracks crosses the street on a through-girder bridge of 66 ft. 8 in. clear span.



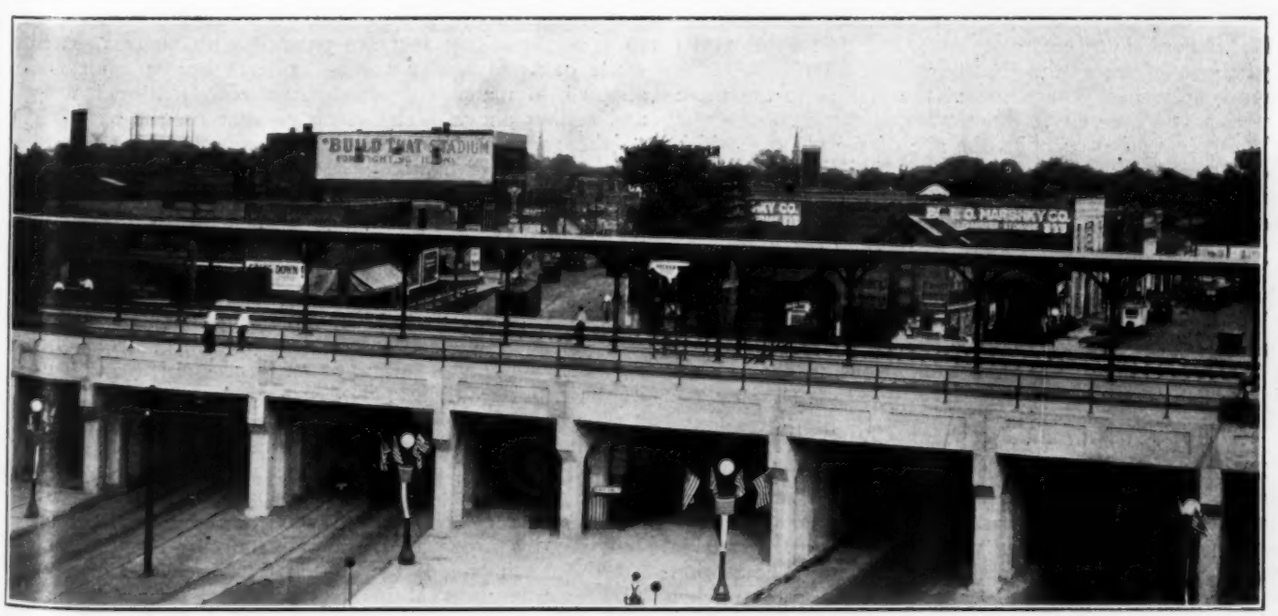
South End of the Track Elevation District Showing the Auxiliary Station Tracks

Temporary Tracks Required

The concrete slabs for the new subways were made at a casting yard on railroad property near the south end of the work, where they were stored until seasoned the required length of time, after which they were placed at the different subways by bridge gangs with derrick cars. These slabs varied from 10 tons to 35 tons in weight. A total of 172 slabs were made. After these slabs were placed in position at the different subways the deck thus formed was covered with a five-ply membrane water proofing.

To carry on the new construction work and maintain the traffic along the two main tracks it was necessary to build or provide temporary main tracks to one or both sides of the old alinement and to make such changes in these tracks as the work progressed as would allow for the building of at least half of each new subway. The east portion of the different subways was built first and the new fill between them made wide enough to carry two tracks on the new embankment. When this portion of the work was completed the tracks were built and carried across the several streets on temporary timber trestles. At University avenue, the street car and interurban traffic was maintained by shifting the one car track from one side of the street to the other as the work progressed. At the time of changing the railroad traffic from the old to the new elevation it was necessary, on account of the headroom, to transfer the street cars to the new track built on the new grade of the street passing under the railroad tracks. When this change was made the street car service was interrupted for 16 hours, while the excavation was made through the old railroad bed. During this time the street car passengers were transferred from one side of the railroad to the other, where cars continued to make their regular schedules.

The filling material for the new embankment was obtained from several sources. Forty-five thousand cubic yards of excavated material from the several subways was hauled by wagons and placed in the new fill as directed. Ninety thousand cubic yards was hauled from Paxton, Ill., 25 miles away, where the railroad was making a grade reduction, and 20,000 cu. yd. was obtained



The Double Subway at University Avenue and Chester Street

by train haul from a borrow-pit at the south end of this work. The work of raising the main tracks south of Green street was started in June, 1923, with dirt from Paxton delivered on cars, and in October of that year the through trains were running over two tracks on the new elevation, for the entire length of the track elevation district, after which the tracks on the old grade were removed and the work of building the west half of the different subways was started. By August, 1924, the new subways and tracks across them were completed, and the last subway was opened to street traffic in September, 1924.

Near the new stadium subway some old yard tracks were re-arranged to provide tracks and cinder platforms to serve as a terminal for football trains. These include three stub tracks on the old level east of the main tracks and four tracks connected at each end west of the main tracks. All of these tracks will hold 14 or more standard passenger coaches, and on special occasions the special passenger trains are handled to this point for unloading and reloading. By this arrangement seven trains can be loading at one time at this point, which is within convenient walking distance of the University stadium, and

Most of the Division Clerical Force Is Housed in a Room 195 ft. Long

makes it possible to get these trains started on the return trips about as fast as they can be loaded. This also helps to prevent serious congestion at the station in the more central part of the city.

The new station occupies the site of the old one which was retained for use as an express building. The old building, 22 by 192 ft., was moved north and west a distance of 290 ft. and placed on a new brick foundation. It was moved on steel rollers traveling over a grid of railroad rails. The transfer occupied 10 days during which the building continued to serve as a station, meals being served in the dining room without interruption. The water, gas and light service was maintained by means of extensions and temporary connections to the several pipes, etc.

New Station of Fireproof Construction

The new station 45 by 289 ft. is a two and one-half story brick and stone building with a steel frame on a concrete foundation. Instead of a cellar under this building, a pipe tunnel has been provided next to the outside walls for all water, gas and steam pipes. The station facilities, consisting of the main waiting room, ticket office, women's rest room, men's smoking room, toilets, dining room, kitchen, and the baggage room occupy the first floor. On the second floor are the offices of the superintendent and other officers and the clerical forces of the division. One large room on this floor, 195 ft. long, houses the greater portion of the clerical force. On the third or attic floor is an assembly room in the center with file and record rooms at each end of the building. There are two entrances to the second floor, one at each end of the structure on the east or track side.

The exterior walls are faced with a rough tapestry brick varying in color from a light to a dark red with white Bedford limestone used freely as a trim. This wall treatment with a red Spanish tile roof gives the structure a pleasing appearance. On the west side of the building, at the center, is a porte cochere under which vehicles drive to receive and discharge patrons. On the east or track side of the station a marquee, with steel frame and corrugated glass ceiling, affords protection to the passengers while waiting for the trains.

The interior wood trim in all rooms of the first floor, except the baggage room, is selected quarter sawed white oak. The floors are terrazzo and in the waiting room the walls to a height of seven feet are of the same material in a light color. In the dining room the walls to a height of six feet are paneled with quarter sawed white oak and burlap painted a light brown color and stippled to match the woodwork; with plastered walls and ceiling above. The lunch counter on the east side of the room is separated from the tables by a screen partition finished like the walls of the room. The kitchen is fitted with the most modern equipment and offers the best of service. The second floor is finished in plain white oak with clear maple floors; and the third floor has the trim of white pine finished natural, with concrete floors.

Heat is provided by a low-pressure, two-pipe vacuum steam system with automatic temperature control. The steam is supplied from a power house north and west of the express building.

The space of 45 ft. between the station and concrete retaining wall at the edge of the new elevation is paved with brick and furnishes ample room for crowds of people waiting for trains. This space is connected with the sidewalk on University avenue, to the south of the building, by three sets of concrete stairs of 12 steps each. At the north end of the station this brick platform, on the same level as Main street, connects with the new pedestrian subway at that street which is 32 ft. wide and 7½ ft. high.

North of Main street and practically on the same level are four stub tracks with brick platforms between. These are for the use of special passenger trains as well as the branch line trains from the west. One of these tracks also serves the new express building west of the tracks. The tracks are on grades of 0.3 per cent or less ascending northward to meet the grade of the new main line tracks at Washington street.

Directly opposite the entrance to the station on the east side is a concrete passageway under the elevation

A View in the Slab Yard

leading to a double stairway, which in turn leads to an island passenger platform on the elevation. This platform, between the two passenger mains, is 1,410 ft. long and is covered by an umbrella shed for a length of 770 ft. Stairways from this platform connect direct with University avenue and Main street but turnstiles and iron picket fences at the street level insure that they will be used for exits only. On the west side of the southward passenger main extending southward from a point 100 ft. north of Main street there is a platform, partly of concrete and partly of wood for the use of baggage trucks serving southbound trains. This is connected with the station floor level by a ramp.

The express building has now been remodeled to provide a city office and wareroom for the express company and necessary facilities for the use of railroad by the down town yard office, car repair men, electricians and telegraph lineman having duties in connection with the passenger equipment passing through the station. West of this building are two brick driveways or entrances from the city streets, affording ample space and facilities for the handling of this business without interference with passing pedestrians in the immediate vicinity of the new station.

A new interlocking tower of the same exterior treatment as the station, having two stories and a basement with modern heating, plumbing and lighting systems, was built along the east right of way line between the main tracks of the Peoria & Eastern and the Wabash. This tower is the important feature of an electric interlocking plant and houses a machine having 104 levers, of which 93 are now in service. Forty-two of these levers operate semaphore signals; the others control switches, derails, a slip switch, a special crossing frog and the necessary locking devices.

The track plan at the north limit of the elevation calls for cross-overs between each two tracks, switch connections with the large yard and engine facilities to the north of this work; also wye connections for interchange business with the foreign railroads and the necessary switches and turnouts to tracks serving the freight house just south of Washington street and west of the main tracks. These are all within the control of the interlocking plant which makes it possible to handle trains from one track to another with ease and rapidity. Cross-overs and connecting switches at the south limit of the four main tracks near Springfield street are hand operated.

All of the excavation and concrete work in connection with the construction of the subways was done under contract by the Bates & Rogers Construction Company of Chicago, the sewer work for the subways by Christensen Brothers of Urbana and the moving of the old station building by Wm. H. Brown & Co. of Chicago. The general contractor for the new station was the Ellington-Miller Company, the plumbing work was done by the Federal Engineering Company and the heating plant by Kehm Brothers Company, all of Chicago. The railroad's forces did all work in connection with the transportation of and placing of the filling material in the new embankment, also the raising of the tracks, and all track work. Its bridge forces handled all work in connection with temporary timber trestles, the placing of concrete slabs at the several subways, the waterproofing of the decks and the construction and removal of all temporary timber platforms both along the tracks on the elevation and around the old station after it was moved to the new location. The crowded condition under which all work was carried on made the handling of the materials and the completion of the several classes of work slow and difficult. The fact that it was necessary to maintain traffic along the railroad tracks without interruption, with practically no delays to trains, no derailments and without serious accident to either persons or property speaks well for the spirit of co-operation shown by all parties connected with

The Old Station Continued in Use While it Was Being Moved

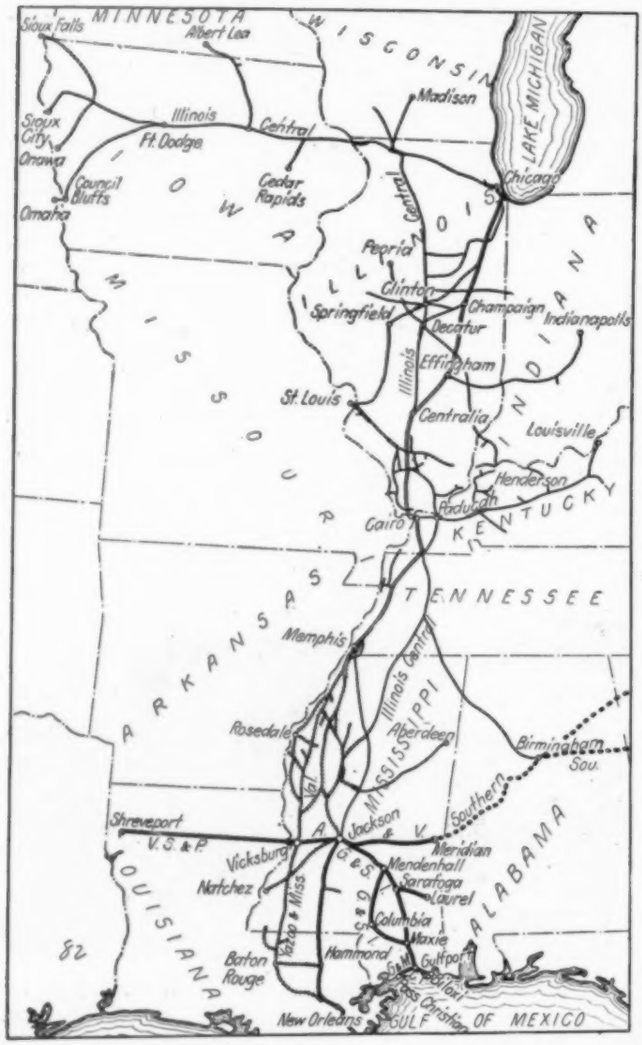
the work and made it possible to accomplish these results.

The dedication of the new station took place on August 9, 1924, when C. H. Markham, president, and other officers of the railroad were guests of the city. The new express building was completed ready for occupancy on November 24, while the last of the signal work, which completed the new facilities, was finished December 1.

This construction work has been under the direction of F. L. Thompson, chief engineer of the Illinois Central, and E. L. Crugar, engineer of construction. The design of the subways and the new station was in charge of C. O. Westfall, engineer of bridges, and F. R. Judd, engineer of buildings, respectively. The writer was resident engineer in charge of construction.

Illinois Central Acquires Southern Feeder Lines

THE Illinois Central has secured two important feeders for the southern portion of its system through a long-time lease of the Alabama & Vicksburg and the Vicksburg, Shreveport & Pacific, and the purchase of the Gulf & Ship Island. The transactions are subject to the approval of the Interstate Commerce Commission. The new leased lines extend east and west across Mississippi and Louisiana and connect with the Illinois Central main line at Jackson, Miss., and with the Yazoo & Mississippi Valley at Vicksburg. The Alabama & Vicksburg extends from Vicksburg, Miss., east to Meridian, a distance of 141 miles, and the Vicksburg, Shreveport & Pacific, from Vicksburg west to Shreveport, La., a distance of 139 miles. The purchased line, the Gulf & Ship Island, has a total length of 307 miles, with a main line from Jackson, Miss., southeast to Gulfport, a branch line from Saratoga, Miss., to Laurel, and a secondary main line from Mendenhall, via Columbia, to Maxie. The Gulf & Ship Island also controls the Gulfport & Mississippi Coast Traction Company, a line extending from Pass Christian, via Gulfport, to Biloxi.



The Illinois Central with Its New Additions

The acquisition of these lines by the Illinois Central is in line with the plans of the Interstate Commerce Commission to join with the larger systems the smaller feeder lines. However, the Vicksburg lines and the Gulf & Ship Island are not weak in point of earning power, since they have been consistently profitable in normal years. The capital stock of the Alabama & Vicksburg has paid seven per cent annually since 1916, and the dividends on the Vicksburg, Shreveport & Pacific stock, while irregular in amount, have been fairly regular in payment. Last year the preferred stock dividend was 2½ per cent and the common stock dividend, 4 per cent. Until recently, when they were purchased by a New York syndicate, the Vicksburg lines had been controlled by English interests. The net railway operating income of the Gulf & Ship Island for the first 10 months of this year was $527,667, and for the 12 months of 1923, $525,355.

The lease of the Vicksburg lines is of strategic importance to the Illinois Central since it opens up new connections with western roads, particularly the Southern Pacific, at Shreveport, La., which will be expected to make up for the loss in interchange business which was received from the Gulf Coast Lines at Baton Rouge prior to the acquisition of those lines by the Missouri Pacific. Another important connection is made at the eastern end of the Alabama & Vicksburg where the Southern is met at Meridian. For a long time through passenger trains, one from New York and another from Atlanta, have been operated from the east to Shreveport via the Southern and the Alabama & Vicksburg. Nearly half the traffic of the Vicksburg lines is lumber and oil, most of which is shipped north. The Illinois Central will now command this business.

The Gulf & Ship Island already operates a through passenger train in conjunction with the Illinois Central from Chicago to Gulfport, Miss., and the resort cities of Biloxi and Pass Christian. Like the Vicksburg lines, it serves a territory which is an originator of considerable freight and passenger traffic and is of equal value as a feeder line to the Illinois Central. Its traffic consists largely of lumber the market for which is in the north and the most direct route to market for which has been via the Illinois Central.

The annual rental to be paid by the Illinois Central for the Vicksburg lines is reported to be sufficient to cover a six per cent dividend on the capital stock of the Alabama & Vicksburg and a five per cent dividend on the preferred and common stock of the Vicksburg, Shreveport & Pacific. The purchase of the Gulf & Ship Island involved a consideration unofficially reported to be $5,000,000.

Moron, a Suburban Station on the Electrified Section of the Buenos Aires Western

Resigns as Securities Owners' Head

S. Davies Warfield succeeded by Milton W. Harrison, hitherto vice-president

S. DAVIES WARFIELD, organizer of the National Association of Owners of Railroad Securities and president of that organization since its inception in May, 1917, has resigned. He has been succeeded as president by Milton W. Harrison, hitherto vice-president of the association. Action was taken at a meeting of the directors held in New York on January 2.

Mr. Warfield announced his intention of resigning as head of the association in an extended communication addressed under date of December 24 to the executive committee and members of the security owners' association. In this letter he reviewed the conditions with reference to railway regulation which led to the formation of the association in 1917, detailed the activity which the organization had conducted, and reaffirmed the purposes and advantages of the provisions embodied in the so-called Warfield plan, and appearing finally in the Transportation Act in the rule of rate-making and the recapture provisions of Section 15-a.

Consolidation and Section 15-a

In his letter, he, in effect, brings up to date the discussion of this subject in comments which he makes on President Coolidge's recent message to Congress. With reference to the President's message he says:

"The message of the President deals with the relation of this section (15a) of the Act to the consolidation of the railroads into a few large systems. The President believes that as the consolidation of the numerous railroads into large systems takes place it 'will reduce the importance' of the principles involved in Section 15a.

"If all the railroads of the country were consolidated into a single system, there would be no necessity for Section 15a. But while the reduction of the number of railroads from some 200 Class I railroads—and the many hundreds of smaller lines—into a few large systems may lessen the necessity for the regulation of the excess over a stated return, there will remain the same traffic unevenness as between the respective traffic territories created unless it it proposed to organize the large systems to lessen competition to the extent of balancing the traffic revenue of the territory occupied by one system with that of another system. Just so long as initiative is encouraged in the managers of the systems to outstrip the others in developing their systems and territories rates will require to be adjusted with reference to the excess produced by them. You cannot escape the resultant fact, if rates are to raise revenue sufficient to enable transportation to be conducted in the general public interest, that certain of the systems would receive revenue from rates thus adjusted to which they are not justly entitled.

Caution Urged by the President

"President Coolidge favors the consolidation of the railroads into fewer large systems, but primarily made permissive with the approval of the commission. This Association believes in permissive consolidations, but along natural traffic lines.

"President Coolidge recognizes the importance of so vital a change in the government's policy toward the railroads as the consolidation of all the railroads into the few very large systems, and urges caution in the various steps to be taken. The President points out that 'the rights and established life of various communities' must be respected and advises that it would be unwise to 'endeavor to anticipate any final plan or adhere to any artificial or unchangeable project which shall stipulate a fixed number of systems.' President Coolidge states that the present law needs amplification of the authority of the commission and suggests the idea of government pressure after a period during which the railroads are expected to bring about desirable consolidations.

"The owners of the securities of the railroads would, of course, be greatly interested in the form that 'government pressure' might be exerted. The co-operation of the security owners is essential and the conservative course advised by the President would indicate recognition of this."

Consolidation of Equipment

Mr. Warfield followed this discussion with extended comment on what he terms the "consolidation of equipment" which has been a leading proposal of the security owners' association. In this connection, among other things, he said:

"There are differences of opinion respecting the conditions under which the number of railroads of the country would be limited to a very few systems. It will remain an experiment until the extent of the economies to be secured are proven. Furthermore, will the economies offset the effect of too great a contraction of facilities with its resultant limitation of incentive and development of the hundreds of millions of this country's undeveloped acres? Under the large consolidations the greatest economy would likely come from the consolidation of the equipment formerly owned by all the railroads under the several railroad heads of the proposed few large consolidated systems. If such is the fact, why not secure immediately the economies that are now plainly evident by consolidating (pooling) the 1,100,000 ordinary box cars (extended later to other classes of cars where practical) under a central agency managed by representatives of the railroads. This could be done immediately—why wait for the consolidation of equipment through consolidation of the railroad corporations, which will take years. For greater economy in operation can be attained by consolidating (by pooling) this equipment under a single central body than under, say, twenty-five consolidated systems.

"The central agency suggested could also secure the consolidation or greater joint use of terminals, freight yards, and other facilities where practicable, including the satndardization of equipment. . . . .

"In connection with amplification of the commission's authority, would not the plan of the central railroad agency outlined be helpful in carrying out the policy suggested by the President? The necessity for pressure by the government would not arise at any period were an agency of the railroads given reasonable power, simultaneously with that to the commission, and required to first do the things manifestly in line with and productive of the economic results expected to be gained by the great concentration of all facilities proposed by consolidations. If pressure is to be exerted, should it not begin here? This agency would work out such consolidations as would prove feasible in consultation with the commission rather than under compulsory methods to be exerted by the government. The owners of railroad securities, affected as they are and will be in the proposed consolidations, should be mindful of the difference. Your association has a far-reaching and productive field here if you with to enter it."

Federal Incorporation

Federal incorporation is strongly opposed by Mr. Warfield as a measure to be adopted in case of the large consolidated companies. He says:

"Many railroads have favored the organization of the new consolidated companies under federal charter, and it is proposed by others in the new order of consolidation to adopt this policy.

"It is well to fully consider what this means. If adopted, an amendment by any subsequent congress to a charter granted by the act of a former congress is all that is required to carry the railroads under government operation and even ownership. A change in congressional policy incident to a political upheaval, always possible under our form of government, could result in a complete reversal of attitude toward the railroads and readily be made effective by federal charter amendment.

"With all the railroads consolidated into a very few systems under strict government regulation narrowed to contact with only several executive railroad heads, a majority of whom would formulate the railroad policy of the country, it is but a short step to government operation at best. Will we not at that point have

exchanged government regulation for government control, in fact operation?"

Public Relations

Mr. Warfield has this to say with reference to the attitude of the railroads:

"Largely upon the railroads themselves will depend the public treatment of them.

"The questions that confront them are largely those of 'attitude' and 'relation.' If they always approach the subjects they are required to face more from the standpoint of the public interest in transportation it will be found that they will best serve the interests of their owners.

"Criticism is not intended in pointing out that nearly every day you read newspaper headlines announcing another record car loading, until you wonder when the final record will be made! No car shortage—then notice of the expenditure of a billion, one or two hundred million by the railroads to stop car shortage and produce this service. Would it not be better to be able to announce how little is spent because of the saving made under a consolidation (pooling) of equipment, putting to greater and more general use what the railroads have? The economies secured through hauling record-breaking tonnage must be commensurate with the expenditure necessary to haul it. There is the far-reaching question to be considered of diminishing returns which takes place when increase of plant passes the point of economic operation."

Varying Interests of Stockholders and Bondholders

Mr. Warfield follows with an outline of the policy and membership of the security owners' organization in which he takes occasion to express his views concerning organizations that represent stockholders as distinguished from non-voting bondholders.

"This association was organized to give collective expression to the great investment in railroads which has no voice in the selection of their managements. The membership consists largely of public investing institutions and other owners of railroad securities that are without voting power, yet constitute three-fifths of the total railroad investment.

"An organization that should alone represent the stockholders of the railroads would speak for a class of investor already represented by the railroad managements which were elected by the stockholders. It would seem that such an organization could add but little to the efforts of those duly appointed by the stockholders, particularly if supported by contributions from the carriers. An organization thus supported would be deprived of freedom of action, and become merely an adjunct to the present railroad agencies.

"The position of this association is distinctly different, as stated. Voluntary in character, it is supported by dues collected from the members, not from railroad sources. Believing that serving the public interest in transportation would best protect the interests you represent, this policy has been followed. This has required that action be without fear or favor.

"As evidence that this policy has been adhered to, the proposals of the association before congress, and now part of the transportation act, were vigorously opposed from the beginning by the carriers through their association of executives. This is not said in a spirit of criticism. It is stated in order to make it plain that no such course as was followed by your association could have been pursued had we been hampered by railroad contributions."

Growth of the Organization

The security owners' association started in 1917, says Mr. Warfield, with two billion dollars of railroad securities represented, whereas now it represents nearly ten billion dollars. This indicates, Mr. Warfield believes, the correctness of the organization's policies, and victory over opposition of various kinds to which the association has been subjected. On this score he says:

"During early controversies with those representing the railroads various methods were used, especially as to section 15a, to create antagonism to the proposals of your active management. The influence of large sums deposited in financial institutions was felt; such cases, however, were isolated.

"Several of the methods adopted would be amusing if the result to be attained had not been serious. Instead of losing members through such a mistaken policy, the association has now its largest membership.

"A striking evidence of character and efficiency in management is afforded by following the growth of institutions whose officials, regardless of the greater object, succumbed to a misguided influence, in comparison with those whose officials did not. While the former accepted without responsibility the benefits of your work, it is significant that the officials of large investing institutions who withstood pressure—and at times it was acute—with the single purpose of loyally protecting the interests represented by them, are closest to the people and have made their institutions the most prosperous and the greatest in their particular fields. Their wisdom in the support of this association and its policies has been proven in the benefits that have accrued to those they represent. I point to the success of these institutions as the confirming evidence of the foresight and efficiency of those who manage them.

"There have been large additions to our membership of the great mutual savings banks whose co-operation throughout the vicissitudes of our existence has been most gratifying."

"The public—which includes the owners of railroad securities, for half the population owns them—owes much," Mr. Warfield says, "to Senator Albert B. Cummins, former chairman of the Senate committee on interstate commerce, and to John J. Esch, former chairman of the House of Representatives committee on interstate and foreign commerce, whose names now appear in the name 'Esch-Cummins Act.'"

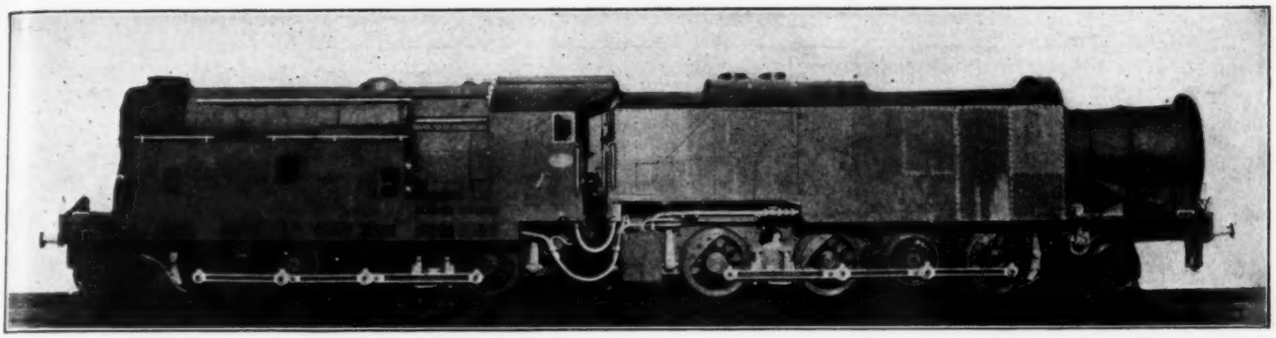
Tentative Valuations Not Reviewable

WASHINGTON, D. C.

OBJECTIONS to or criticisms of the Interstate Commerce Commission's valuation methods must be handled before the commission in connection with hearings on protests of the roads against the tentative valuation reports and the courts may not interpose until the commission has issued its final valuation reports, the Supreme Court of the United States held in a decision rendered on January 5 in the Delaware & Hudson case. The court affirmed the decision of the district court for the southern district of New York, which had denied the application of the Delaware & Hudson and its subsidiaries for an injunction against the tentative valuation. After stating the allegations of the petition and quoting the valuation act the court concluded its decision as follows:

"The 'tentative valuation' of the statute is no more than an *ex parte* appraisement without probative effect. By the authorized 'protest' the carrier may offer objections to anything done or omitted in respect thereof and secure the commission's rulings before the valuation becomes final. Prior to the present proceeding protests, raising the very issues now tendered, had been made and were awaiting action. There is nothing to indicate that the commission wilfully disregarded the law as honestly interpreted or failed to proceed in an orderly manner, or that it will not consider and pass upon all the matters set up in the protest and repeated here. Pending further action by it the tentative valuation will not become final and no proceedings thereon can be taken. Under the circumstances disclosed appellants must pursue the remedy provided by the statute and give the commission opportunity to take final action before they can properly ask interposition by the courts."

THE CHICAGO, BURLINGTON & QUINCY has petitioned the Interstate Commerce Commission for an extension of time to June 30, 1925, to complete the automatic train control installation required by the commission's order of 1922. The company has let a contract to the Sprague Safety Control & Signal Company which guarantees compliance with the commission's specifications.



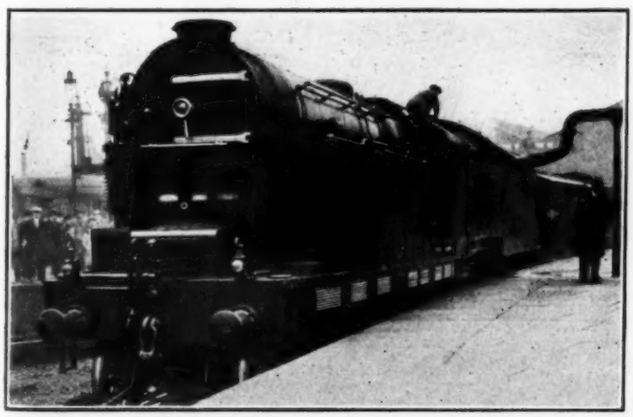
General View of the Ramsay Turbo Electric Locomotive

Turbo Electric Condensing Locomotive*

Ramsay development embodies unique condenser—Electric control provides flexibility

By George F. Jones and T. Laurence Hale

WITH the present-day demands for increased hauling capacity together with greater need for economy in fuel consumption, emphasizing, in these respects, the limitations of the orthodox designs of locomotives, it is not surprising to find engineers contemplating the attractive possibilities offered by locomotive development along lines other than the conventional.



Front and Left Side View of the Ramsay Locomotive

There is great room for improvement when it is considered that a locomotive of the ordinary type has a thermal efficiency of only approximately six per cent and that doubling its thermal efficiency would reduce the fuel consumption by half or, alternatively, allow a much more powerful locomotive to be built with the present practical limits of firebox area.

The replacing of cylinders by the steam turbine is an innovation in locomotive construction, but not more so than the application of condensation which is rendered possible by its introduction. From a thermodynamic point of view, it is evident that turbo locomotives, whatever their systems of power transmission, whether electrical or gear, largely depend for their economies in fuel consumption upon the efficiency and reliability of their condensing plant.

*Abstract of a paper presented at the annual meeting of the Railroad Division of the American Society of Mechanical Engineers.

General Description

The front portion of the Ramsay locomotive, which is connected to the rear portion by a special universal joint, incorporates the boiler, forced draft set and driver's cab, the main turbo-alternator set and the auxiliary direct-current turbo generator being situated under the boiler. The rear portion of the locomotive is practically devoted to the condensing plant with axial fan, condensate extracting pump, etc. Room, however, has been found for the main water tank and coal bunker. Communication between the turbines and condenser is by means of a 24-in. diameter exhaust pipe which is provided with a flexible rubber connection reinforced by internal rings of aluminum.

Each portion of the locomotive carries two driving motors, each pair of motors being bolted to a center crossbearer which carries a transmitting shaft and spur wheels. Pinions are keyed to the motor shafts and these mesh with the spur wheels, the power being finally transmitted through coupling rods from the spur wheels to the driving wheels in the ordinary manner. The spur wheel and pinion shafts, are enclosed in a gear case and run in an oil bath. The gear ratio is 2.8 to 1.

The main turbine is of the impulse type and contains nine stages. The mean blade diameter is 36 in. It is designed for a steam pressure of 200 lb. per sq. in., and the steam is superheated to a total temperature of 685 deg. F., exhausting to a vacuum of 27 in. The turbine is flexibly coupled to a three-phase alternator and has a speed range of 1,800 r.p.m. at starting to 3,600 r.p.m. at 60 miles an hour. The three-phase alternator is designed to develop 890 kw. at a maximum pressure of 660 volts.

The auxiliary turbine is a single stage machine flexibly

coupled to a direct-current generator, which provides the energy for the excitation of the main alternator poles as well as for the auxiliary direct current motors driving the condenser fan, condenser rotor, condenser extracting pump and the forced draft set for the boiler. It also supplies the necessary current for lighting the train. The auxiliary turbine operates under the same steam conditions as the main turbo set.

The boiler is of the ordinary locomotive type and the combustion chamber is supplied with air by a high speed forced draft set located in the cab. A simple locking device is provided on the fire door to prevent a blow-back, the door being prevented from opening by a safety catch when the forced draft fan is in operation.

The transmission of power from the main turbine to the driving motors is three-phase, current being supplied from the alternator to the four alternating current slip ring motors, each motor having a continuous output capacity of 275 b.hp. and one hour's rating of 360 b.hp.

The following tractive force is developed at the rims of the driving wheels for the acceleration period from rest to 60 miles an hour:

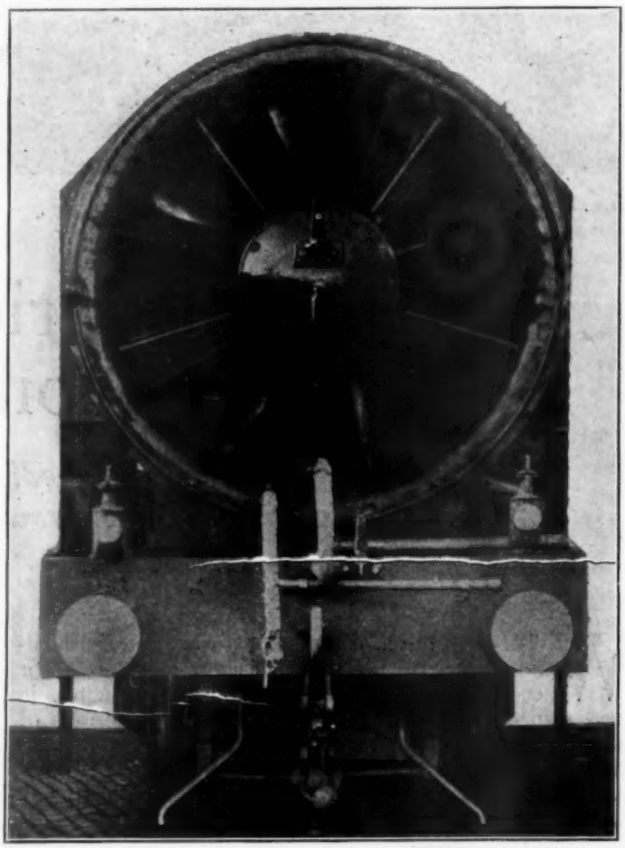
Miles an hour	Tractive force
At starting	22,000 lb.
15	22,000 lb.
30	11,050 lb.
60	8,600 lb.
60 (normal running)	6,000 lb.

Design and Description of the Condensing Plant

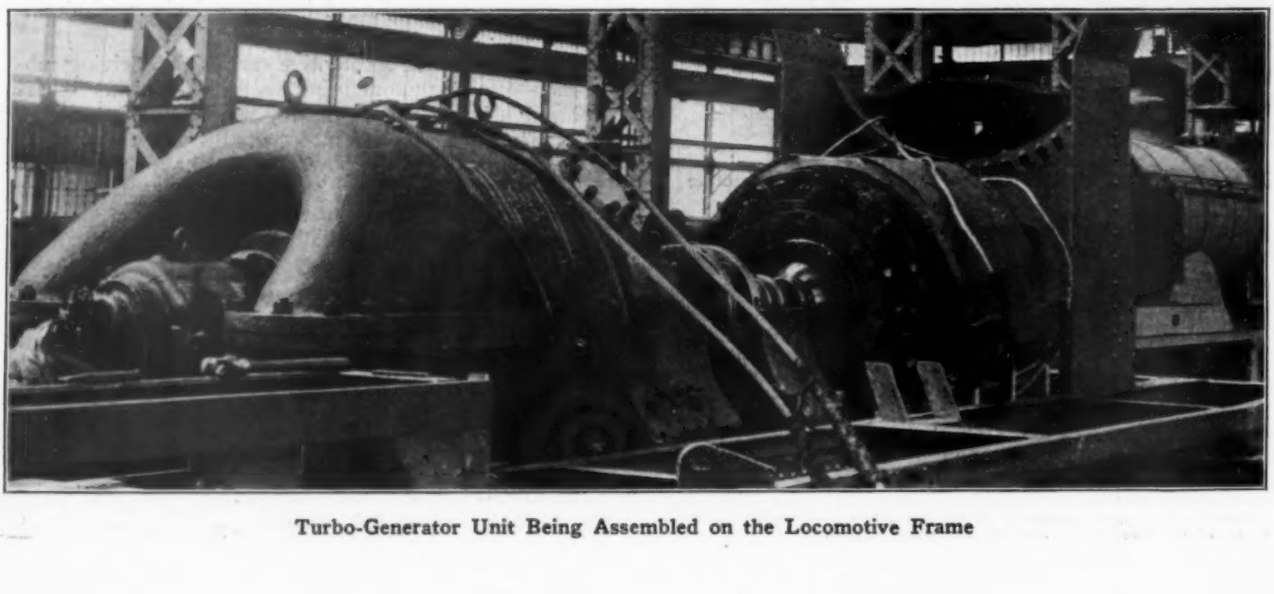
As the success of a locomotive of this description depends in such a large measure upon the design and action of its condenser, it is perhaps not irrelevant to give a very brief review of the groundwork which influenced the adoption of the principle of evaporation as the basis of design for the present condenser.

In the light of previous experience with the difficulties of recooling condensing systems, it was decided to attack the exhaust steam by direct means. It was fully realized that the alternative method to evaporation, that of direct cooling by air alone, involved the employment of large condensing surfaces and excessive fan power, and that such a type of condenser would depend for its success largely upon atmospheric conditions, and, while probably producing a satisfactory vacuum in low temperature countries, the system would be at a great disadvantage and far from satisfactory in hotter climates. Attention was, therefore, turned towards evolving a suitable condenser on the direct cooling system based on the evaporative principle as being the system to successfully meet the atmospheric conditions of all countries.

In design, the ordinary evaporative condenser has progressed but little and still remains practically as originally conceived; such test results as existed were unreliable and it was, therefore, necessary to carry out a series of preliminary experiments on small scale condensing apparatus with fans to produce a current of air and so intensify the evaporative effect. The importance of maintaining a thin and unbroken water film upon the condensing surfaces was easily demonstrated and, of the numer-

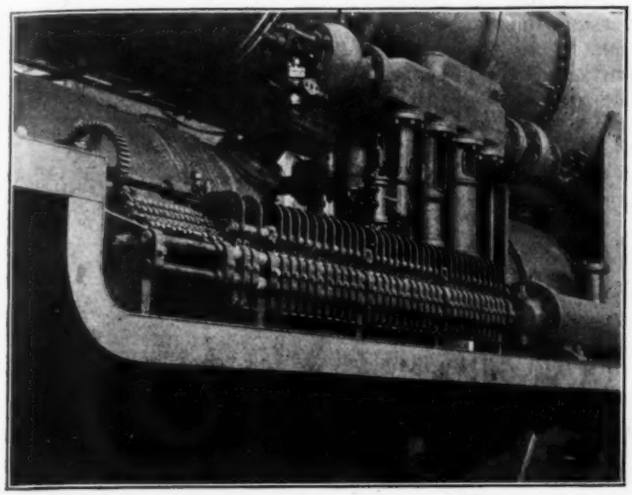


Rear View of the Locomotive Showing the Condenser Fan



Turbo-Generator Unit Being Assembled on the Locomotive Frame

ous methods and contrivances tested with a view to producing satisfactory water filming of the surfaces under a blast of air, the simple method of completely immersing the surfaces in water before exposing them to the air current was found to give the most reliable and proper



The Grid Type Resistances and Turbine Governor

film effect. Repeated tests on a small condensing plant proved the type to be exceedingly economical in water consumption, in practice approximately only one pound of water being evaporated to condense one pound of steam. The fan power required was reasonably low while the rate of heat transmission was found to be moderately high and sufficient to bring the condensing surface well within the practical limits.

Further experiments were carried out on a plant containing some 400 sq. ft. of surface. For the sake of simplicity, the condensing surfaces were composed of ordinary brass condenser tubes and, as a natural development to facilitate the process of filming, they were arragned in the form of a circular cage, or hollow drum. The drum, supported between bearings, was rotated in a tank containing water, the tubes passing through the water as they rotated. The condenser was supplied with air by an axial fan and was tested in conjunction with a steam regenerator and the necessary wet air pump, water filming of the surfaces and resultant evaporation taking place successfully. The promising results from this experimental work led to the design and construction of the present locomotive condenser.

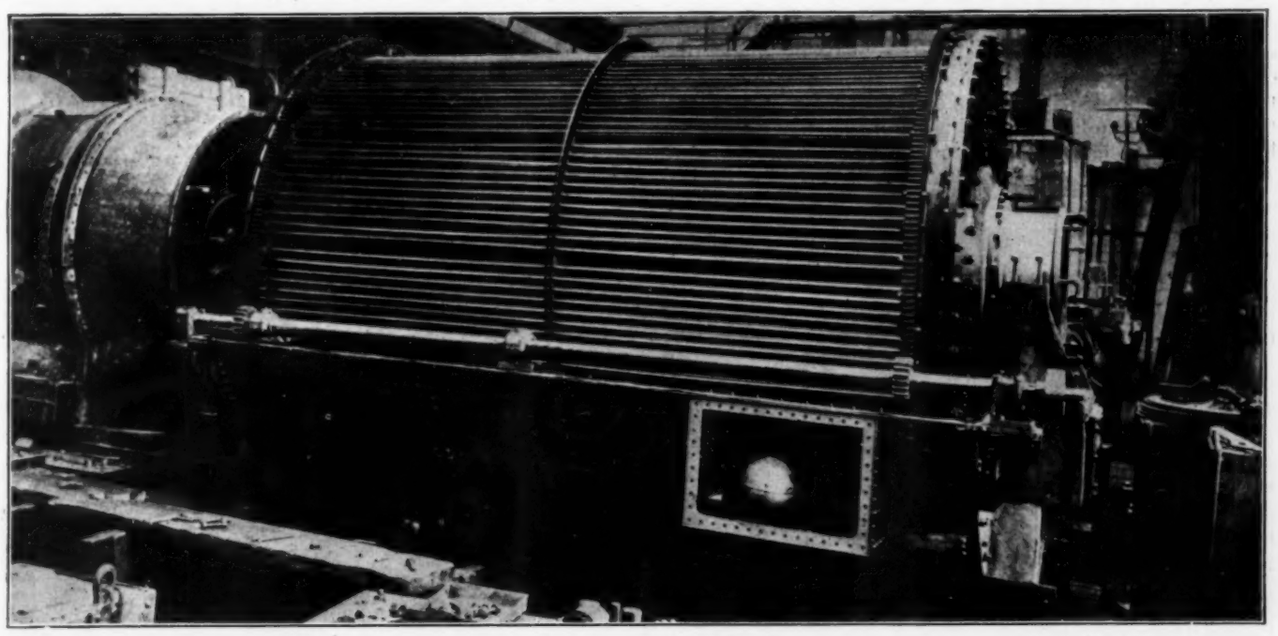
Ordinary condenser practice was observed in the construction of the drum which consists of an annular nest of standard ¾-in. diameter brass condenser tubes ferruled into two headers. The exhaust steam entering one header is condensed, and the resultant condensate is collected and drawn off from the other header and returned to the hot well by the rotary extraction pump as hot, clean feed water for the boiler. The trunnions of the respective headers are fitted with air tight glands of the steam sealed self-adjusting type, and this design of gland has given satisfaction in resisting air leakage into the condenser.

A small motor, driving through a spur gear, turns the drum which is housed in a sheet metal casing, the bottom of which forms a tank containing water fed from the main tank for purposes of filming, and a pneumatic float maintains the water at a constant level. The condensate extracting pump is of the ordinary rotary condenser design, while the air pump is of the steam ejector type and has two stages. This pump is supplied with steam from the boiler through a reducing valve.

Control of Power and Speed Regulation

Before starting the locomotive, the auxiliary turbine is run up to a speed of 3,000 r.p.m., thus providing excitation for the main alternator and energy for the motor-driven auxiliaries. The main turbine set is then run up to half speed; viz., 1,800 r.p.m. At this period the motors are connected in cascade by the master controller in the driver's cab. Then the locomotive may be started.

It is well known that when a turbine speeds up from rest to full speed, its torque decreases in the ratio of two to one, and when passing through the period of half speed its torque is one and one-half times the normal and



Condenser Casing Removed to Show the Construction

this is the torque of the main locomotive turbine when running at starting speed; namely, 1,800 r.p.m. Again, two alternating current motors when connected in cascade and running at half the alternator speed, have twice the turning moment that they have when connected in parallel with the same power consumption. Therefore, with the driving motors in cascade and the main turbine running at half speed, the torque from rest to quarter speed will be two times 1.5, or three times the normal torque. The motors now being connected in parallel with the turbine running at half speed, the speed of the locomotive increases from one quarter to one half speed, and the torque becomes 1.5 times the normal. The turbine speed is then increased to the maximum and the torque drops from 1.5 times the normal to normal.

In controlling the speed of the Ramsay locomotive from rest to 60 miles an hour, the following sequence of operations is observed:

After the main and auxiliary turbines have been brought to speed by means of the hand wheels in the cab which control the steam inlets, all control of the locomotive is carried out electrically by means of the master controller. To start the locomotive, the controller wheel is moved to the first notch, thereby closing the excitation circuit of the alternator and connecting the driving motors in cascade with resistance wholly in circuit. Further movement of the control wheel cuts out resistance until a first running position of 15 miles an hour is obtained. If a greater speed is desired, the controller wheel is further moved round and changes the motor connections from cascade to parallel, and the excitation circuit being again closed, the motors once more operate under current, resistance being cut out until a second free running speed of 30 miles an hour is reached.

Further increases of speed are obtained by moving the controller wheel round, step by step, whereby the setting of the main turbine governor is correspondingly altered, that is, the speed of the turbo-alternator is increased and thereby the periodicity. In this manner the speed of the locomotive can be increased from 30 to 60 miles an hour. A reduction in the speed of the locomotive is obtained by turning the controller wheel quickly back to the zero position, thus observing the reverse succession of operations to those of starting up to full speed. The excitation circuit being opened, the motors are without current and ready for starting up again in cascade.

Reversing the locomotive is, of course, effected by reversing the driving motors in the ordinary way. The illustrations show the general arrangement of the front portion of the locomotive. The resistances, which are of the grid type, are arranged under the running plates on either side. Both vacuum and Westinghouse brake equipment is used.

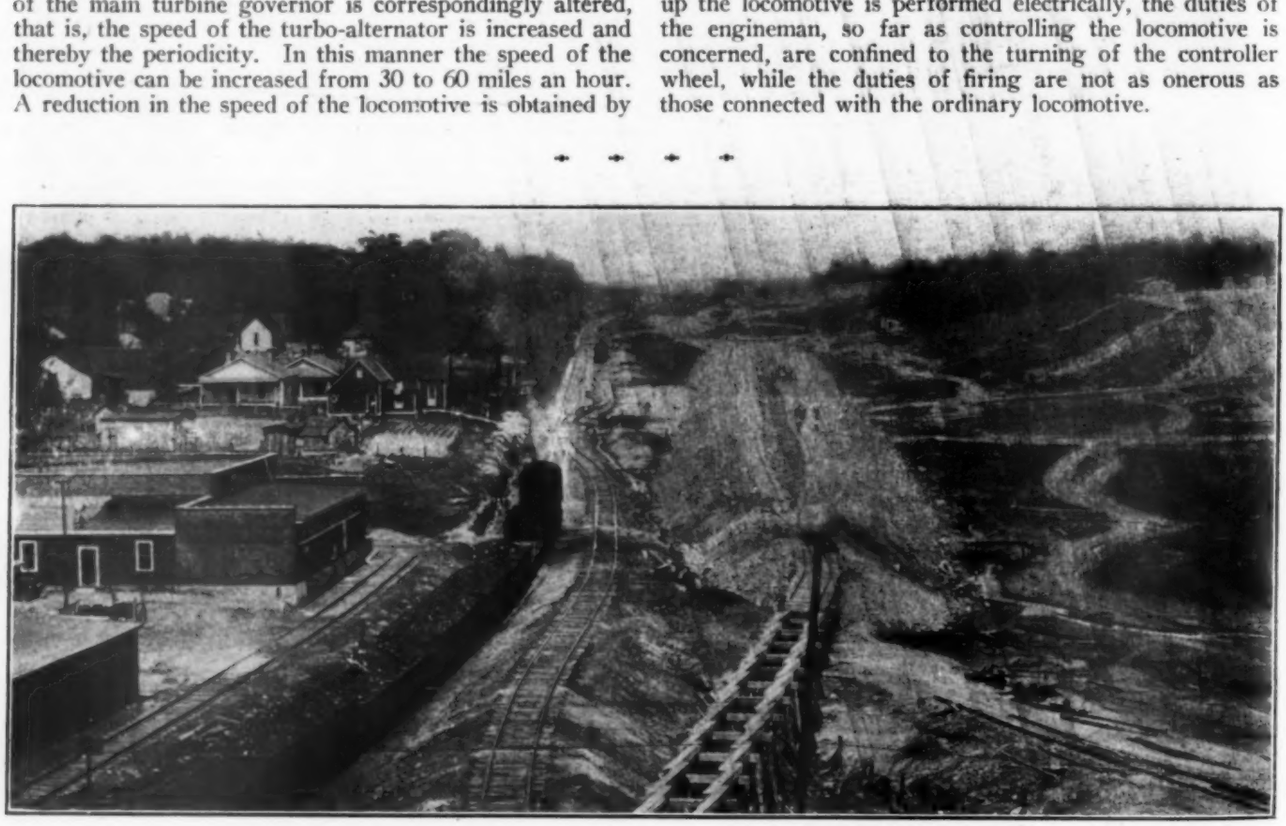
PRINCIPAL DIMENSIONS AND PROPORTIONS

Length overall	69 ft. 7 in.
Total wheel base	59 ft. 4 in.
Rigid wheel base	16 ft. 4 in.
Driving wheel diameter	48 in.
Height from rail to center line of boiler	10 ft. 3 in.
Maximum width	9 ft. 0 in.
Total heating surface of boiler	1,543 sq. ft.
Grate area	28 sq. ft.
Tractive force at starting	22,000 lb.

Shop and Main Line Testing

Shop tests, to ascertain the reliability of the special electrical control were carried out before the locomotive was given actual running trials. In addition, several main line trials were made when the locomotive hauled heavy trains without difficulty, a vacuum, ranging from 80 to 95 per cent, being regularly attained and held. Pronounced smoothness of running was evident, due to the constant and even turning moment exerted by the driving motors.

At no time during the run did the temperature of the condenser exceed 135 deg. F. which corresponds to a vacuum of 25 in. of mercury. Improvement in the vacuum during easier periods of the run were noted. The work of driving and firing was carried out by ordinary railway employees and, as all the work in speeding up the locomotive is performed electrically, the duties of the engineman, so far as controlling the locomotive is concerned, are confined to the turning of the controller wheel, while the duties of firing are not as onerous as those connected with the ordinary locomotive.



Working on the New Alternate Line of the Illinois Central in Kentucky

Progress in High Grade Rail Steel

By C. B. Bronson

Assistant Inspecting Engineer, New York Central System

[*The following is a paper presented by Mr. Bronson before the American Society for Steel Treating on December 17, 1924. It reviews much of the recent developments in steel rail manufacture. Mr. Bronson was closely associated with the late Dr. Dudley, former consulting engineer for the system, and is now engaged in carrying forward many of the investigations which he started.*—EDITOR.]

THE maintenance of way department forms one of the large users of steel and iron, of which materials the steel rail is the most important. The subject of rails has been much discussed and important progress has been made in the past two or three years during which several changes and innovations have been instituted. Heavier rail has been coming more and more into widespread use, many eastern lines using sections varying from 125 lb. to 136 lb., with western roads stepping up from 90 lb. to 110 lb. and, in some cases, to 130 lb. The initial cost of this heavier rail is more than offset by the operating and maintenance economies resulting from the longer life of the rail, the lessened tamping and other work of a similar character.

Rail Lengths Increased to 39 Ft.

The standard rail length is being increased to 39 ft. and the bulk of the tonnage for many roads during the coming year will be of this length. The demand for the longer rail arose from several causes, the principal one being the high maintenance cost of rail ends due to battering and breakage brought about by the suspended joint. Utilizing a supported joint and long bars and giving reasonable maintenance, battering largely disappears. The practice of the New York Central in this respect is to use a 38-in. bar supported on three ties.

One of the recent developments in rail steel is the experimental use of a higher percentage of silicon, the old minimum of 0.10 being replaced by 0.20. This places rail steel on a parity with that for wheels, tires and automotive and other high grade steels. The object of this higher silicon content is to secure cleaner steel at no additional cost. A solid and cleaner steel is desirable even at the price of an increased depth of pipe.

Separation of the "A" Rails and High Carbon Heats

Another practice which has been instituted is that of separating the "A" rails and the high carbon heats. The "A" rail being from the top of the ingot contains the most segregation and in use these rails are being restricted to tangents or to track in slow speed, light traffic territory. The heats on the high side of the specified carbon range are selected for installation on curves. The old practice was to mix the rails regardless of the position in the ingot or the amount of carbon. This practice of separating the rails should result in increasing the average life and in reducing head failures.

Four Fundamentals to Rail Problem

There are four fundamentals to the rail problem which fall under the following general heads: Design of section, adjustment of composition for physical properties, failure in service and wear. The design of section is largely of two types:

1. The first type is the rail section with the thick base, deep head and low fishing depth for a given weight. This type requires the use of carbon approaching the eutectoid percentage for 130-lb. rails. The Brinell hardness of 100-lb. rail with 0.68 carbon content is higher than that of the 130-lb. rail with 0.85 carbon. The effect of the roll pressures is limited and the annealing of the rail head on the hot bed is retarded.

2. The second type is the section with the broad, thin head and having a moderate thickness of flange and a maximum fishing depth. The rail on the New York Central lines is all of this type up to and including the 127-lb. section. This principle secures a well-worked head in rolling and proper grain refinement. The carbon content is held to a maximum of 0.75 in the heaviest sections.

Breakages

Certain types of breakages have decreased. Base and web failures, for instance, are few, seams, mill defects or injuries generally accounting for these breaks. Head failures predominate and especially "A" rail failures of the crushed or split head type. The number of fissures has not decreased materially, although the rate per 100 miles of open hearth steel in service is now about one-half of that of seven or eight years ago. The product of certain mills is now almost immune from this type of failure and this fact is corroborated by the experience of several other heavy traffic roads.

Wear

There are two types of wear, one on tangents and the other on curves. The present carbon steel rails have ample resistance for wear on tangents and heat-treated rails are not needed there. A top wear of about 3/32 in. occurs in eight years under heavy traffic. Most roads remove tangent rails for battered ends and not head wear.

The wear on sharp curves calls for special consideration and in this connection the problem of heat treated and alloy steels enters. There have been a variety of steels tried in the past 20 years or more, such as nickel, nickel-chromium, high carbon, low carbon and high manganese, addition of copper, vanadium, chrome-vanadium, oil or water quenched low carbon, manganese, Sandberg air treated, etc. Most of the alloys were abandoned due to breakage and to high first cost or other economic reasons. The high-manganese-low-carbon and the copperized rail steel are still under test. The oil or water quenched carbon steel is not attractive, for while the treatment may be successful on short lengths or on comparatively few rails, there are no indications that the rails would be uniformly treated on a tonnage commercial basis.

Twelve Per Cent Manganese Steel

The 12 per cent manganese has been very successful. The life of such steel is about 10 times that of open hearth and no breakages occur except hair cracks resulting from the slipping of the drivers. With this type, a stiff rail section is needed to offset the low elastic limit of the steel. The Sandberg process looks quite promising. The increase in life more than offsets the extra charge for treatment. The wear is less than for the plain open hearth steel but much greater than for the manganese steel. The process might be further improved by invert-

ing the rail and spraying the head surface with oil to secure greater toughness and resistance to wear.

Special Rails and Heat Treatment

The experience with special rails has not been generally successful. The treatment of rails is only necessary for resistance to wear on curves; the treatment of the head being all that is required. The stiffness of the rail section can be made adequate by design, limiting the stresses in the base and web to low values. A modified Sandberg treatment should yield increased service value in the wear portion of the rail head. Aside from the question of treatment, the most important problem is to secure open hearth steel with less segregation and greater cleanliness.

Other Materials of Heat Treated or Special Steel

Among the other materials used in maintenance of way service which are either heat treated or of special steel are manganese rail bound or insert frogs. These are better than the solid manganese frog and the breakage is much less. Some roads raise the wing rails at the throat about 3/16 in. above the point thus placing the wear on the wing rails instead of on the point and increasing the life of the frog. This is also found necessary due to the compression of the manganese steel.

The oil treatment of splice bars and track bolts has become a well-known practice. Through treatment, the elastic limit is raised to 80,000 lb. and the ultimate strength to 120,000 lb. It has overcome the notching effect on the head of the splice bars brought about by the rail ends digging into the bars and has materially reduced bar failures. In bolts, it has increased the desirable physical properties and has prevented stretching. In a new process for reclaiming splice bars, the fishing depth of the old bars is renewed by pressing, thus restoring the fishing depth without distortion of holes. Provision has been made in the process for giving the bars an oil quench, thus making it possible to increase the strength of plain annealed bars.

The use of copper in tie plates is now recognized and after seven years experience it has been found that the life of copper treated tie plates is materially increased. Copper is now being specified in steel for spikes where the corrosion is excessive combined with throat cutting. The corrosion of track materials from brine drippings has been a serious matter and the deterioration of metals has been considerably hastened as a result of this. In order to prevent it, some roads are now oiling their rail and track fixtures. During 1924 the New York Central System oiled some 3,500 miles.

Heat treatment can be applied to a great variety of other track fixtures, such as nut locks, rail anchors, guard rails, braces, switch stand parts, scales, bearing, etc. There is a large field for the further application of heat treatment to track fixtures and parts, for it is important that the railways secure tough material in order to resist the effect of shocks and impacts at high speeds. In most cases, a simple treatment applied to plain carbon steel will furnish all of the essentials of strength, toughness and rigidity. The use of so-called fancy steel is to be avoided.

THE ATLANTIC COAST LINE, in its weekly pamphlet entitled "Timely Railroad Topics" which it distributes to publications and the public along its lines, suggests that the best New Year's resolution the American people could make and stick to would be "that there shall be no politics dealing with the railroads." The pamphlet describes the accomplishments of the railroads during 1924, making a comparison with previous years and describing in detail the needs of the railroads in the future.

A New Steel Pole

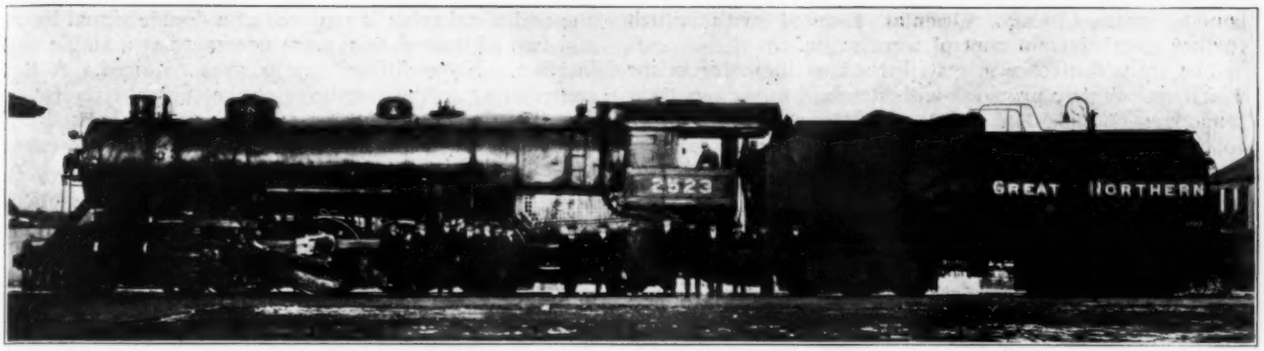
THE Truscon Steel Company, Youngstown, Ohio, has placed on the market a steel pole which is designed primarily to meet the demand for a metal pole that is strong, rigid, durable and economical in either light or heavy service. This pole can be used for electric transmission and distribution lines, telephone and telegraph lines, or any other purpose for which poles are needed. It is said that the cost is practically the same as that of a wood pole. The manufacturer subjected this pole to practical tests under varying conditions for a period of over two years before placing it on the market.

Truscon Steel Pole

The salient feature of the pole is its simple construction. It is made from 5 in. to 12 in. steel channels or I-beams. The pole is manufactured by pressing a portion of the web of the channel, or I-beam, out to a predetermined angle and then riveting this pressed out section to a similar section of another channel or I-beam. So strenuous have been the tests given this pole that the manufacturers claim that when it is anchored in concrete and painted about every five years it will last indefinitely. It is manufactured in all sizes up to a length of 50 ft. and so constructed that no special equipment is required by linemen to climb it. This eliminates pole steps and the need for spurred climbers.

A complete line of galvanized fittings has been designed for the pole, to fit any size of standard cross-arm of either wood or steel, these costing no more than ordinary through bolts. When more than ordinary strength or extra length are desired the pole can be made in combinations of two or more.

Building the Belt Line Around Prague, Czechoslovakia

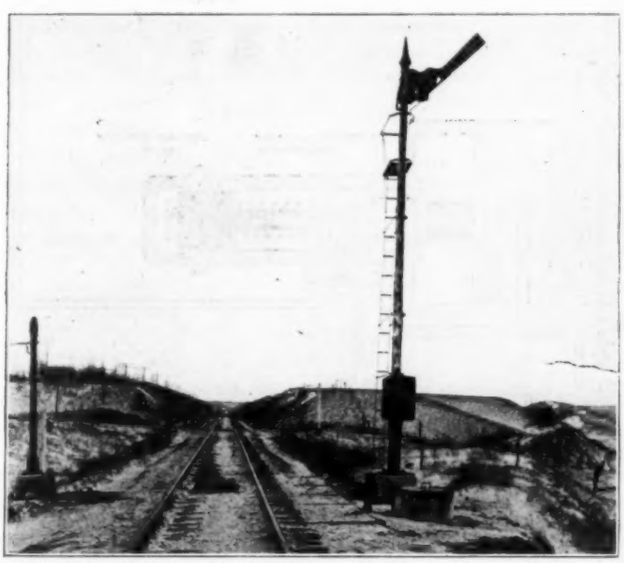


One of the Great Northern Mountain Type Passenger Locomotives Equipped with Train Control

Great Northern Installs Train Control

Description of Sprague auxiliary system as inspected by representatives of Interstate Commerce Commission

THE installation of auxiliary train control on the 20-mile section of single track line between Minot, N. D., and Berthold, on the Great Northern was inspected by representatives of the Bureau of Train Control and Signals of the Interstate Commerce Commission on November 22 to 26, 1924, inclusive.



The Magnet Is Located Between the Rails at the Signal

This installation is of the intermittent inductive non-contact type. It is one of the simpler forms of auxiliary train control manufactured by the Sprague Safety Control & Signal Corporation covering a plain automatic stop with fixed predetermined brake-pipe reduction, and with a feature providing for an acknowledgment by the engineman at stop signals or at control points in the rear to forestall a brake application.

This 20-mile section is a portion of the division specified by the Interstate Commerce Commission between Minot, N. D., and Williston—121 miles. The six locomotives now equipped represent that portion of the amount required by the Commission in an interim inspection, there being a total of 40 locomotives assigned and to be equipped in this territory. In the initial installation four of the six locomotives are freight engines of the 3,200 class and the remainder two of the Great Northern's new P-2 mountain type passenger engines of the 2,500 class.

Although this equipment comprises a plain automatic stop, as manufactured by the Sprague Company, it embodies provision for changing to any of the intermediate forms of train control up to the complete multiple braking, speed control type with automatic clearing from the roadway as called for in schedules on some other railways, merely by addition to, rather than substitutions for present equipment.

The whole inspection by the representatives of the Bureau of Train Control from November 22 to 26, was materially expedited on the part of the Great Northern by reason of system officers of the mechanical, signal and operating departments, as well as their local officers, being present, this resulting in placing in the hands of the Commission's representatives on short notice special passenger trains or freight trains, any particular class of equipped engine desired, as well as service freight and passenger trains.

Connection of Roadway Apparatus With Signaling

Detailed inspection of the roadway was first undertaken. On the morning of November 24, a freight locomotive with a caboose and business car was operated over the 20-mile roadway section under various stop conditions set up along the roadway. The afternoon was devoted to inspection of the equipped locomotives at the roundhouse. On the morning of November 25, a passenger locomotive with six coaches and two business cars was run over the section as a special train. Several stops were made by automatic means due to either natural conditions because of trains in the block or by signals set at stop. Upon the return of this train to Minot at noon a freight train of 2,250 tons, 60 cars with 22 loads, awaited the inspection party. Two business cars were immediately attached to the rear and the train proceeded over the 20-mile section, typical tests being made to demonstrate the operation of the equipment under various conditions. The business cars were detached at Berthold, the western terminus of the 20-mile section and the inspection party in the course of an hour boarded the east-

bound Seattle-Chicago Oriental Limited with which further tests of train control were made.

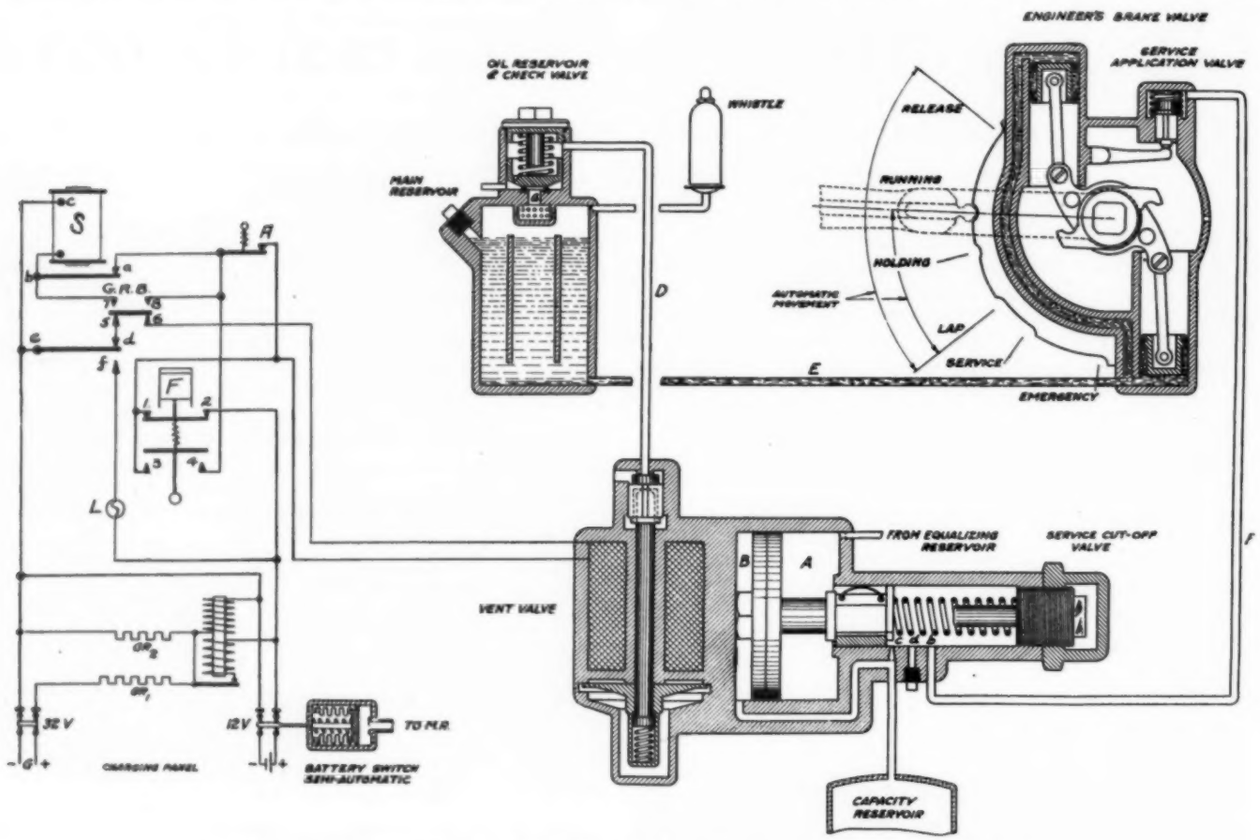
The train control was installed on a single track line which was already provided with standard upper quadrant semaphore signals embracing absolute permissive block form of circuit control. This feature makes possible a very simple method of control of the track elements. As this train control system is the intermittent inductive type, control of the train is accomplished by means of application magnets located on the ties between the rails at each control point. Physically the application magnet consists of 10 permanent magnet bars assembled in two groups of five each, with an electro-magnet of opposite polarity interposed between the two. The entire assembly is enclosed in a sealed manganese steel casing for protection. The magnets are supported in the ballast between pairs of ties by extension arms resting upon and secured to the ties. The top surface of the magnet assembly is two inches below the top of the rail.

Normally, these magnet bars produce a magnetic field from pole to pole transverse to the track, and it is this permanent magnetic field above the assembly that is utilized to transmit impulses from the roadway to the locomotive. The purpose of the electro-magnet is to divert, under proper signal conditions, the magnetic field caused by the permanent magnet bars away from the operating area above it, so as to permit of a train passing without receiving a magnetic impulse and consequent brake application. The electro-magnet is supplied with current from the signal operating battery, but is normally on open circuit and so connected to it as to produce the necessary diverting field only when circuits are closed, due to the combined presence of an approaching train, a clear block and signal indications ahead. Only one additional relay is required at a double signal location and two additional relays are necessary at a single signal location. No additional line wire is required. A factor contributing to the simplicity of the control circuits is the fact that the locomotive receiving element is located under the pilot, thus eliminating the necessity of track cut sections or slow acting relays.

Locomotive Equipment

The physical parts comprising the locomotive equipment are:

1. The *application receiver assembly,* consisting of a pair of flat soft iron magnetic flux collector plates riveted to a non-magnetic casting which is bolted to the underframe of the locomotive directly ahead of the front pony truck wheels. The under part of this unit is adjusted to a clearance of six inches above the top of the rails. To the tips of the plates, and comprising part of this assembly is fastened:



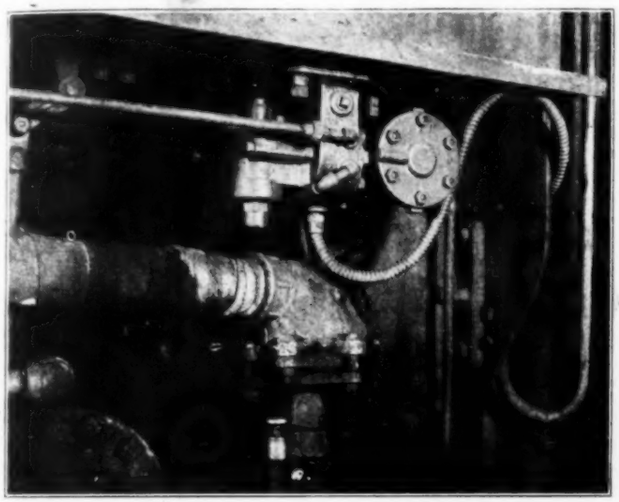
Schematic Diagram Air and Electrical Equipment Normal or Running Position

2. The *application magnetic receiver unit* which contains a magnetically operated armature of small mass and is substantially a magnetic relay. When an impulse from the track is received the magnetic flux is picked up by the receiver plates, is transmitted to and concentrated upon this armature, causing it momentarily to open. The entire unit is sealed and contained within a non-magnetic housing as part of the receiver assembly.

3. The *stick relay,* sealed and also cushioned, within an iron housing, is applied to the upper transverse sheet at the rear of the cab. This is a single coil double armature relay of special type, and is controlled electrically by the magnetic receiver so as to make permanent in character the momentary impulse received from the track by the latter.

4. The *charging panel,* which is fastened to the rear of the cab and adjacent to the stick relay, controls the storage battery current supply to the electrical equipment, and is also adapted to operate the 12-volt train control circuit and charge the storage battery from the turbo-generator.

5. The *engineman's brake head,* which replaces the standard H-6 brake head and is provided with fluid actu-

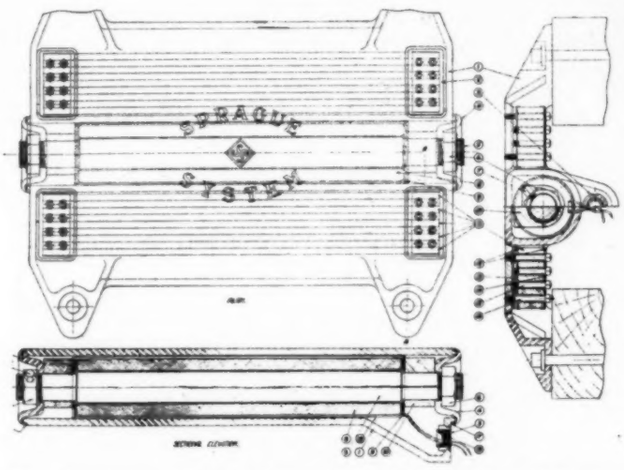


The Automatic Brake Control Valve Is Mounted Under the Cab

ated pistons yoked to the rotary valve spindle for lapping the valve handle automatically. In all other respects the brake heads are identical and are interchangeable upon the same studs.

6. The *oil reservoir and supply valve* is located within the cab above and ahead of the brake valve.

7. The *automatic brake control valve* is located on the left side of the cab under the deck. The assembly con-



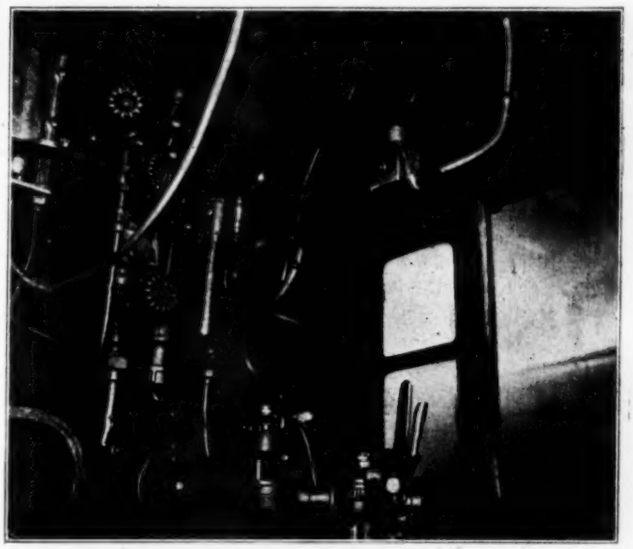
The Permanent Magnet Bars and the Electro Magnet Form the Track Unit

sists of a pipe manifold to which is fastened an electrically operated air vent valve. This valve is controlled by the stick relay, so that when the latter in turn is operated by the magnetic receiver the air equipment operates to apply the brakes. Also fastened to the manifold is the service application valve, by means of which a predetermined brake pipe reduction is obtained when automatic braking takes place.

Accessory equipment consists of a 12-volt storage battery, a cab indication lamp, a ground reset button for resetting the equipment after a brake application, and a forestalling switch located in the cab within reach of the engineman to enable him, if alert, to forestall a brake application at a stop magnet.

Electrical Operation

A schematic diagram of the air and electrical equipment in normal or running position is shown herewith. Referring to the electrical part of the diagram, positive battery flows to the stick relay via normally closed contacts *1* and *2* of the forestalling switch, armature *"A"* of the magnetic receiver, stick contact *"a"* of the relay and thence through the relay and back to negative battery. Positive battery also flows via contacts *1* and *2* of the forestalling switch to the vent valve and thence to negative battery via normally closed contacts *5* and *6* of the ground reset button, front contact *"d"*, and armature *"d-e"* of the stick relay. Connected direct to positive battery, but normally open circuited at back contact *"f"* of the stick relay, is indicating lamp *"L."* Normally open



The Release Device and Brake Head Are Noticeable in the Cab

contacts *7* and *8* of the ground reset button form a by-passing circuit around the stick contact of the relay when operated as later explained.

When a track impulse is received from the application track magnet, armature *"A"* is opened momentarily, thus breaking the circuit to the stick relay and causing both of the armatures to drop. Since the stick contact *"a"* is broken, the relay remains de-energized despite the fact that armature *"A"* of the magnetic receiver closes immediately after the magnet is passed. The breaking of contact *"d"* opens the circuit to the vent valve thereby causing an application of the brakes as described in the operation of the air equipment. De-energization of the relay also establishes the indicating lamp circuit via back contact *"f,"* which serves as a visible indication to the engineman in the cab.

So long as the vent valve remains de-energized the brakes cannot be released. Ground reset button *"GRB"* is located so as to be accessible only from the ground, and it is necessary therefore to bring the train to a full stop before this button can be operated to re-establish the stick circuit. Energizing the stick relay in turn closes

the vent valve circuit at contact *"d,"* thus permitting the engineman to release.

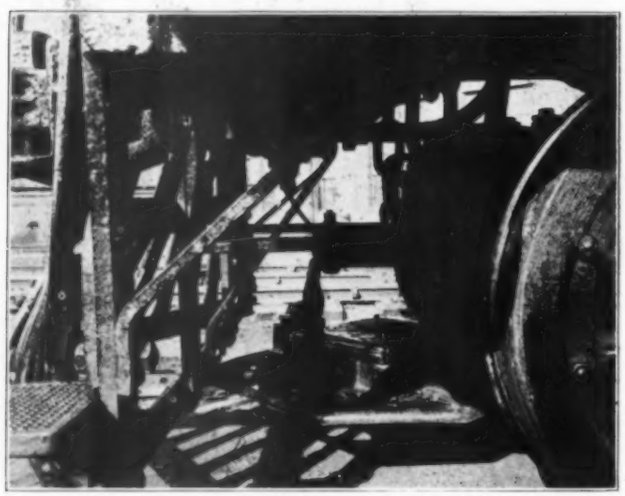
In order to insure the maintenance of the ground reset button in the normal position the negative vent valve circuit is interlocked through it via normally closed contacts *5* and *6*. It is evident that unless the contact plate is allowed to return after resetting, the vent valve circuit will remain open.

If the engineman is alert, he may forestall a brake application at a stop magnet by operating the forestalling switch *"F."* Operation of this switch closes contacts *3* and *4* thereby by-passing positive battery around the magnetic receiver armature *"A"* to the stick relay. The forestalling switch, however, is provided with a time-delay mechanism which is released by the movement of the rod necessary to close contacts *3* and *4*. If the forestalling switch is held closed longer than a certain predetermined time, the time delay mechanism will function and open contacts *1* and *2*, thereby dropping the stick relay, with a resultant application of the brakes. This time interval is adjustable and on the Great Northern installation is set at 15 sec.

Air Operation

Referring now to the air portion of the diagram, as shown schematically, this equipment consists of the control valve, oil reservoir and supply valve, and engineman's brake head. The control valve comprises a manifold, to one side of which is attached the vent valve. Normally the coil of this valve is energized as explained above, thus maintaining main reservoir pressure in pipe *"D"* by means of a self-adjusting armature and self-centering metallic faced valve.

To the other side of the manifold is attached the automatic service valve consisting of a plain cut-off valve in



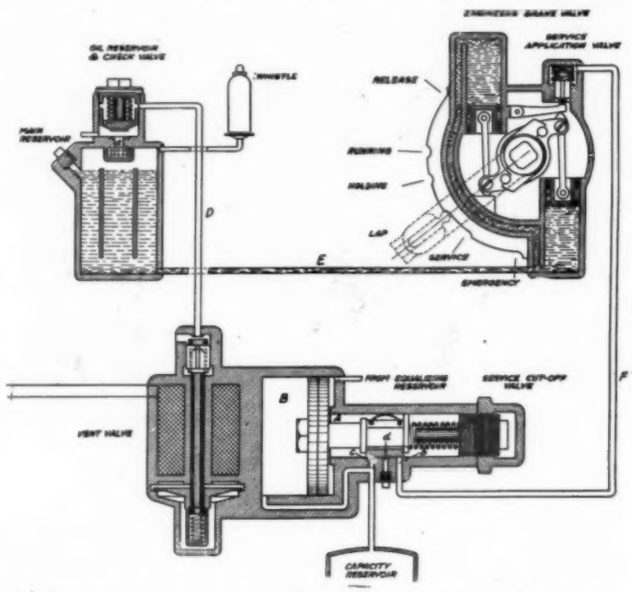
The Receiver Assembly Mounted Under the Pilot

engagement with a piston in chamber *"A,"* normally pushed back to chamber *"B,"* (really a part of chamber *"A"*) by an adjustable spring.

As shown, air at normal brake pipe pressure, coming from the equalizing reservoir, fills chamber *"A,"* the spring spaces the ports *"c, d, b,"* the first connected to chamber *"B"* and to the capacity reservoir and the last brake head. An alternative connection to *"F"* is shown in port *"d."*

The engineman's brake head, interchangeable with the standard brake head, has, in addition to the normal air spindle and engineer's handle, two motor pistons, air-oil driven, connected to a yoke rotated upon the brakehead casting, upon which are two drive pins which when the cylinders are pushed out by air-oil pressure will engage with an interlocking arm carried on the air spindle. Normally, there is no such engagement and the movement of the air spindle by the engineman's brake handle is as usual.

Directly in line with one of the cylinders is the service application exhaust valve, connected with pipe *"F"* and normally closed to atmosphere. Pressure upon a lever arm impinging against the end of the valve when engaged by the movement of the piston-driven yoke will open the service application valve to atmosphere when the engineman's brake handle is moved to lap position (by automatic



Schematic Diagram Air Equipment Service Application Position

action only), exhausting air through pipe *"F"* from port *"b"* and chamber *"A."*

It will be noted that in the normal position the air pressures in chambers *"A"* and *"B"* and the capacity reservoir are the same as in the equalizing reservoir, that is, the same as in the brake pipe, but the moment that a drop of pressure occurs in chamber *"A"* because of the opening of *"F"* to atmosphere, there is a quick movement forward of the piston and a cut-off of port *"c,"* thus imprisoning in the capacity reservoir a volume of air at the then brake pipe pressure. Proper chokes are interpolated in the connections to the equalizing and capacity reservoirs, the latter being the smaller.

Bleeding of the air through pipe *"F"* to atmosphere will cause the piston to move forward in chamber *"A,"* driven by the air pressure in chamber *"B,"* supplied by the capacity reservoir, until the slide valve cuts off the exhaust automatically at any predetermined drop of pressure. This pressure drop, on the freight engines, is set at 10 lb. and on the passenger engines at 22 lb. For the former, the pipe *"F"* is connected to port *"d"* and port *"b"* is blanked; for the latter the connections are as shown. When the possibility of an engine being used for both types of service exists, both ports are connected to pipe *"F"* via a three-way cock, thus permitting one or the other to be cut in as the service requires.

It will be noted that this valve so functions that when once set for a definite number of pounds reduction that number remains constant, regardless of changes in initial normal brake pipe pressure. A further special operation

of this valve is that its action is interlocked with the manual operation of the brakes, for since the piston moves in response to equalizing reservoir pressure reductions, obviously it is immaterial whether a reduction is made through the engineman's brake valve in the service position, or via pipe *"F"* as explained. The result is that if manual braking has been initiated prior to the receipt of an automatic reduction, the latter is reduced up to its limit by the amount of the manual reduction so that no piling on of additional braking effort and accompanying needless waste of brake pipe air is possible—both of utmost importance in the operation of freight trains.

The pressure to drive the brake valve pistons is that of the main reservoir, superposed on the oil in the oil reservoir, on top of which is a check valve and to which is also attached the whistle. Under normal conditions the main reservoir air is supplied through a metering hole to the upper chamber of the check valve and thence to pipe *"D,"* the outlet of which to atmosphere is normally maintained closed by the vent valve.

When the circuit of the latter is broken and the valve opens there is a sudden reduction of pressure in the upper chamber of the check valve, and the main reservoir pressure in the lower chamber lifts the valve against the compression spring and opens port *"a,"* so that main reservoir pressure, through a broken air stream, flows into the oil reservoir and gives the necessary pressure to move the piston to the position indicated in the diagram. This movement of the pistons laps the engineman's rotary valve and while preventing a movement of the handle manually toward release during automatic application, the engineman is free to move it toward the service or emergency positions at any time. This diagram also shows the piston of the service cut-off valve when moved to its extreme cut-off position.

When the coil of the vent valve is energized the opening of *"D"* to atmosphere is closed, main reservoir pressure builds up in the upper chamber of the check valve through the metering hole, and the spring closes valve *"a,"* the pressure on the oil then being released through the warning whistle, which has meanwhile been operated by main reservoir pressure precisely as the brake head pistons have been. This release of pressure now permits the brake handle to be manually moved to holding, running or release positions.

The outlet of pipe *"F"* to atmosphere having been closed automatically at the service application valve in the engineman's brake head on reverse movement of the engineman's brake handle, air from the equalizing reservoir, at normal brake pipe pressure, will raise the pressure in chamber *"A,"* equalizing it with that in chamber *"B,"* and the piston with its cut-off valve will be forced back by the regulating spring until it returns to the normal position.

Time for Train Control Installations Extended

WASHINGTON, D. C.

THE effective date for the fulfilment of the Interstate Commerce Commission's order of June 13, 1922, requiring the installation of automatic train control, has been extended in the case of some of the roads for various periods, generally to July 1, in orders entered by the commission, and additional roads have been exempted from the operation of the order. In the case of four roads, however, the Baltimore & Ohio, Central of Jersey, Delaware & Hudson and Richmond, Fredericksburg & Potomac, the commission denied the petitions filed. That of the Delaware & Hudson asked for exemption from the order and on the day that the extension orders were issued it applied to the federal court for an injunction restraining the enforcement of the order, but most of the roads have filed petitions asking for extensions for a definite period within which they expected to be able to complete the installations.

The commission's order required completion of the installation on a passenger locomotive division by January 1, 1925, at which time the commission had formally approved but one installation, that of the Chicago, Rock Island & Pacific, although the installations required in the case of the Chicago & Eastern Illinois and the Chesapeake & Ohio had been completed. Section 26 of the Interstate Commerce Act, under which the order was issued, provides that: "Any common carrier which refuses or neglects to comply with any order of the commission made under the authority conferred by this section shall be liable to a penalty of $100 for each day that such refusal or neglect continues, which shall accrue to the United States, and may be recovered in a civil action brought by the United States."

Petitions of the roads for an extension of the effective date, accompanied by a report of their efforts to comply with the order and of the progress made to date, began arriving at the commission's offices about the middle of December, as reported in previous issues of the *Railway Age,* and many were filed during the past few days of the year. The commission acted on some of these petitions on December 30, making its orders public on the following day, and on others on January 5. The form of the orders is a statement that upon further consideration of the record in this proceeding and the petition filed by the road for extension of the time specified for fulfilment of the order, the order is modified so as to provide that the effective date of fulfilment thereof shall be July 1, 1925, in lieu of January 1, 1925, "with respect to the above named carrier, and that in all other respects said order shall remain in full force and effect." The words "with respect to the above named carrier" were omitted from two of the orders at first but corrected orders were issued later.

The petitions of the Baltimore & Ohio, Central of New Jersey and Richmond, Fredericksburg & Potomac, which were denied, were for extensions of time. In the case of the Buffalo, Rochester & Pittsburgh and Chicago & Erie, the orders of June 13, 1922, and January 14, 1924, were vacated and set aside. In the case of the Chesapeake & Ohio the order provides that the installation may be made on that portion of the line between Gordonsville and Staunton, Va., where it has been completed, in lieu of the installation required by the order. In the case of the Norfolk & Western the effective date was made March 1 and in that of the Oregon-Washington Railroad & Navigation Company and the Union Pacific it was made April 1, but the date was made July 1 in the case of the Chicago

& Alton; Chicago & Northwestern; Chicago, Burlington & Quincy; Chicago, Indianapolis & Louisville; Southern and Cincinnati; New Orleans & Texas Pacific; Erie; Great Northern; Illinois Central; Kansas City Southern; Lehigh Valley; Louisville & Nashville; New York Central; Boston & Albany; Cleveland, Cincinnati, Chicago & St. Louis; Michigan Central and Pittsburgh & Lake Erie; New York, Chicago & St. Louis; New York, New Haven & Hartford; Northern Pacific; Pere Marquette; St. Louis-San Francisco; Boston & Maine; and Missouri Pacific. The second order, of January 14, 1924, was set aside as to the O.-W. R.R. & N.

The Interstate Commerce Commission has made public letters written by E. H. De Groot, Jr., director of its Bureau of Signals and Train Control Devices, under date of December 26, to L. W. Baldwin, president of the Missouri Pacific, and J. E. Hutchison, vice-president of the St. Louis-San Francisco, regarding the preliminary inspections made by representatives of the commission of the installation of the National Safety Appliance Company's automatic train stop on 20-mile sections of those roads, at their request, containing comments and criticisms developed by a brief inspection intended to be helpful to the carrier in checking the installations against the specifications and requirements of the commission. As in the case of the letter to W. R. Scott of the Southern Pacific published in the *Railway Age* of December 27, 1924, page 1174. These letters were substituted for earlier letters on the same subject after investigation, conference and demonstration.

Harahan Outlines Progress

W. J. Harahan, president of the Chesapeake & Ohio and chairman of the Train Control Committee, Association of Railway Executives, issued the following statement at Washington on January 6:

"Substantial progress was made during the year 1924 in the work of installing automatic train control devices on the railroads of this country.

"The work continues to progress rapidly and every effort is being made to complete it at the earliest practical date, on 8,360 miles of track of the 46 Class I carriers which the Interstate Commerce Commission in its order No. 1 designated for the installation of train control devices and which have not been exempted from that order.

"Up to January 1, 1925, train control installations were actually in operation or under construction and under way on 3,592 miles of track or 42 per cent of the total mileage covered in the commission's order No. 1.

"The total cost of this work when completed in accordance only with order No. 1 of the commission will be approximately $32,000,000 including a substantial amount for additions to or changes in the existing signal system. This expenditure of millions of dollars is being made in accordance with the order of the commission by the railroads in the interest of the public welfare despite the general opinion of the carriers that automatic train control is in a development stage and that no practical system has yet been found.

"Of the roads named in the original order of the Interstate Commerce Commission, three have completed installations while eight others are from 75 to 90 per cent finished. Nineteen have sections of 20 miles ready for service, some of which are already in operation. In addition, they have also installed the necessary signal equipment and erected pole lines, so that a large portion of the wayside work over the entire divisions designated by the Interstate Commerce Commission has been finished.

"The original order of the Interstate Commerce Commission named 49 roads but the St. Paul, Minneapolis & Omaha, the Buffalo, Rochester & Pittsburgh and the Western Maryland railroads were later exempted. The commission on January 14, 1924, in its order No. 2 also ordered 47 of the roads listed originally to install train control on a second division and also ordered 45 additional roads to equip one division prior to February 1, 1926. Subsequently, at the request of the carriers, the commission suspended the second order so far as the 45 additional roads were concerned.

"While the roads are going ahead with the compliance of the commission's order, they feel that, in view of the fact train control is now in a development stage, such widespread installation at this time at an enormous cost is not justified and that the results attained will not warrant this expenditure.

"While it is claimed that train control will result in an enormous saving of lives, Interstate Commerce Commission reports show that only 134 persons or six per cent of the total fatalities on the railroads in 1923 resulted from collisions both on the right of way and in the yards. Of that number, only twelve were passengers. Compared with this, 2,135 persons were killed in grade crossing accidents during that year.

"In view of these facts, the carriers feel that the public welfare would derive a greater benefit and safety would be further conserved if, in most cases, the money to be used for train control could be spent for improving signal systems and for the further protection of grade crossings."

One of Sixty-five Volunteer Fire Brigades of the Canadian National

J. S. Pyeatt President of D. & R. G. W.

Former president of Gulf Coast Lines elected to succeed T. H. Beacom on western road

J. SAMUEL PYEATT, president of the Gulf Coast Lines, has been elected president of the newly reorganized Denver & Rio Grande Western, as reported in the *Railway Age* of December 20. He succeeds T. H. Beacom, who has been receiver of the Denver & Rio Grande Western since his appointment to that position by Federal Judge Symes of Denver in August, 1923.

It was a natural step for Mr. Pyeatt, whose record as president of the Gulf Coast Lines has been noteworthy, to be transferred to the Denver & Rio Grande Western, of which the Missouri Pacific is half owner, following the acquisition of the Gulf Coast Lines by the Missouri Pacific. Since Mr. Pyeatt's election to the presidency of these lines in 1916 their history has been one of constantly increasing prosperity. For example, during government control, the earnings of the lines were considerably in excess of the standard return fixed under the Railroad Control Act. The physical condition of the property has likewise been vastly improved, both as to roadway and as to rolling stock.

The financial results attained on the Gulf Coast Lines during 1924 were particularly gratifying. The net operating income for the first 10 months of this year was $4,831,566 as compared with $3,556,449 for the first 10 months of 1923 and $2,799,973 for the same period in 1922. An initial dividend at the rate of 6 per cent was declared on December 1, 1920, and this was increased to 7 per cent on March 1, 1923. Thus it will be seen that the Gulf Coast Lines have been established on a sound physical and financial basis under the direction of Mr. Pyeatt as president.

In assuming the presidency of the Denver & Rio Grande Western, Mr. Pyeatt faces operating problems very different from those with which he contended on the Gulf Coast Lines. The Denver & Rio Grande Western is a mountain railroad crossing the heart of the continental divide with heavy gradients, whereas the Gulf Coast Lines are noted for their favorable position in this respect. Due to the efforts of Mr. Beacom as receiver, however, the task which Mr. Pyeatt faces is less formidable than it might have been. Mr. Beacom has skillfully directed the expenditures of large sums for the improvement of the roadway and equipment, has added greatly to the facilities at terminals and reorganized the official personnel and their duties. Much credit for the improvement in the condition of the Denver & Rio Grande Western, its better performance at reduced cost and the creation of a helpful and favorable attitude toward the road, both by its employees and its patrons, is due to Mr. Beacom.

Now that the financial obstacles in the way of the progress of the Denver & Rio Grande Western have been reduced through its reorganization, it is expected that the line's progress will be satisfactory. With an unfortunate financial history a thing of the past and the rehabilitation of its physical condition, the road has an opportunity to take its place among the other prosperous and successful Missouri Pacific roads.

J. Samuel Pyeatt

Although he is not a mountain railroad man, much of Mr. Pyeatt's experience has been with western roads. His training was in the operating department and he has been markedly successful in increasing operating revenues while holding the expenses to a minimum. The operating ratio of the Gulf Coast Lines has been materially reduced during Mr. Pyeatt's administration, being 59.55 for the first 10 months of this year.

Mr. Pyeatt was born on September 29, 1874, at Prairie Grove, Ark. He entered railway service in October, 1894, as a clerk in the local station of the Cleveland, Cincinanti, Chicago & St. Louis at Cairo, Ill., and was later assigned to various kinds of station, yard and office work at the same place. He was appointed chief clerk to the general superintendent of the St. Louis, Iron Mountain & Southern, now a part of the Missouri Pacific, in March, 1897, and held that position until 1901, when he was appointed chief clerk to the general manager of the Missouri Pacific and the St. Louis, Iron Mountain & Southern.

Mr. Pyeatt's first appointment to an official position in the operating department came in October, 1904, when he was made superintendent of the Buffalo division of the Pere Marquette, with headquarters at St. Thomas, Ont. In July of the following year he was transferred to the Detroit terminal at Detroit, Mich., and he remained there until January, 1911, when he was transferred to the Grand Rapids division. Mr. Pyeatt remained on this division for only four months, accepting an appointment as superintendent of the River and Cape division of the St. Louis & San Francisco on May 1, 1911. He was promoted to vice-president and general superintendent of the St. Louis-San Francisco & Texas and the Fort Worth

& Rio Grande railways, with headquarters at Fort Worth, Tex., in February, 1912, and in June of that year, was elected vice-president and general maanger of the St. Louis & San Francisco lines in Texas. These lines comprised the New Orleans, Texas & Mexico, the Beaumont, Sour Lake & Western, the Orange & Northwestern and the St. Louis, Brownsville & Mexico.

In the reorganization of the St. Louis-San Francisco in 1916, the lines in Texas were reorganized separately as the Gulf Coast Lines and Mr. Pyeatt was elected president. At the beginning of federal operation in June, 1918, he was appointed federal manager of the Missouri, Kansas & Texas of Texas, the Gulf, Colorado & Santa Fe, the Fort Worth & Denver City, the Houston & Texas Central and various other lines in the southwest, known as Group 6 of the United States Railroad Administration. He was appointed federal manager of the St. Louis-San Francisco in March, 1919, and held that position until the end of federal control on March 1, 1920, when he was re-elected president of the Gulf Coast Lines, with headquarters at Houston, Tex. He remained in this position until his recent election as president of the D. & R. G. W.

Hearing on Consolidation Bill

WASHINGTON, D. C.

HEARINGS before the Senate committee on interstate commerce on Senator Cummins' bill to amend the consolidation provisions of the transportation act for the purpose of expediting consolidations were resumed on January 7, Secretary Hoover having testified in support of the bill at a previous hearing last year, but the progress made was not such as to indicate much intention on the part of members of the committee to press for such legislation at this session. Senator Cummins, however, said he intended to press for the consideration of the bill. Alfred P. Thom, general counsel of the Association of Railway Executives, who said the railroads are not to be classed as opponents of the idea of consolidation, although they have some objections to some of the provisions of the bill, began a general statement on the subject but in a little more than an hour an adjournment was taken to January 9. Chairman Smith said the hearings probably would not be very extensive when Mr. Thom asked what opportunity would be afforded for the testimony of other witnesses. He said that S. T. Bledsoe, general counsel of the Atchison, Topeka & Santa Fe, desired to be heard if the hearings were to be continued, but that he might submit a written statement. Bird M. Robinson, president of the American Short Line Railroad Association, said that the short lines desired to present testimony and J. E. Benton, general solicitor of the National Association of Railway and Utilities Commissioners, said that as soon as the association's legislative committee is appointed it would doubtless wish to present the resolutions adopted by the association in opposition to federal incorporation.

Before beginning his statement Mr. Thom urged the committee to give consideration at the proper time to the bill introduced by Senator McLean to provide for a reduction in the rate of interest on railroad indebtedness to the government, saying that such relief is necessary to avert a receivership of the Chicago, Milwaukee & St. Paul by June 1. Regarding the consolidation bill he said he had no doubt that the time has come, or soon will come, when it will be necessary to take legislative note of the changed transportation conditions. Immense progress has already been made in respect of the idea of consolidation. The policy was approved by a Democratic President in 1920 and two Republican Presidents have since made recommendations to Congress on the subject. Also the idea has made great progress among the railway executives themselves and for several months much has been heard of the efforts to form a great system with the Nickel Plate as a nucleus, of the plans of the Southern Pacific, and of the conferences between the eastern executives in an effort to find a way of grouping the trunk line roads. If it is desirable to have consolidations it is probably the duty of Congress to see what is the situation under the present law and what is necessary to make the policy effective. In response to a question Mr. Thom said that the activities of the executives are doubtless prompted partly by a feeling that this is a situation they will have to meet and partly by approval of the policy, as indicated by the progress being made in bringing additional lines under a single management by lease or otherwise. However, there is a good deal of expert opinion among railroads that the idea of economies to result from consolidation can be greatly overestimated. There are differences of opinion, he said, and we are told that in England consolidations have not resulted in economy. Perhaps in some departments there could be some economies but Mr. Thom expressed the opinion that comparatively little could be done to reduce the "labor cost of management." He pointed to the organization of the Southern Pacific system, which has a chairman of the executive committee at the head but also has two presidents, and said it is the general understanding that if the Nickel Plate unification takes place the present executives will probably as a matter of necessity be retained as operating officers of the roads over which they now have jurisdiction. He thought that indicates a feeling that there is a limit to the size of the systems which one man can successfully operate but pointed out that such organization affords the advantages of having a harmonious policy for the whole system to be carried out by the presidents. Referring to other possible economies, Mr. Thom said that it would probably be possible to discontinue some duplicate service and that there should be considered the ability of a consolidated railroad to carry business within its system in some instances by a shorter route than that of one of the roads and thus effect some reduction in cost. He also mentioned the possible saving from making purchases on a larger scale and from the better credit which a large system might have. Senators Howell and Gooding interrupted with questions apparently designed to show that the economies to be expected would be so small as to remove the desirability of consolidations but Senator Cummins objected to having his bill judged on that basis primarily. He said that while he of course hoped to bring about transportation at the lowest possible cost, he had advocated consolidations because he believed that unless taken care of in some way by consolidation a large part of the railroad mileage must either be abandoned or taken over by the government and that if the bill were to be considered on the basis of the economies alone he would have no sufficient reason for urging it. He would rather see the discussion directed toward the idea of consolidations as the best way of providing for effective transportation service for the country and said that the recapture provisions of the transportation act were inserted merely as a makeshift until consolidations could be brought about. Mr. Thom said that he had not intended to dwell on the subject of economies but that it is necessary to protect the

railroads against a charge in the future that they have overplayed the idea of economy. At this point the adjournment was taken, after Senator Cummins had vainly urged that an afternoon session be held.

Mr. Thom said he desired to call the attention of the committee to the seriousness of the situation of the Chicago, Milwaukee & St. Paul which requires emergency action. It has $48,000,000 of 4 per cent bonds maturing on June 1, he said, and no way of providing for them except by asking the holders for an extension, which would require some increase in interest rate. In 1923 the road earned about the amount of its fixed charges but in 1924 it did not quite earn them. It owes the government $55,000,000, including the amount of its loan from the revolving fund administered by the Interstate Commerce Commission and its indebtedness to the Railroad Administration, all bearing 6 per cent interest. Bills have been introduced in the House by Representative Madden and in the Senate by Senator McLean to reduce the rate of interest on such indebtedness to ¼ of 1 per cent above the average price paid for money by the government, the exact amount to be determined by the Secretary of the Treasury. The Madden bill also contains a provision that this shall not exceed 4½ per cent and it is proposed to ask that such an amendment be made to the Senate bill, but the Treasury Department, to which the question had been referred by the House committee, had reported that this method of ascertaining the rate would be burdensome and result in a decimal fraction of several figures. Therefore it has recommended that the rate be fixed at 4¾ per cent. Mr. Thom said that the bill would of course apply to all roads and that the total indebtedness to the government is now about $350,000,000. The Boston & Maine and New York, New Haven & Hartford also owe large amounts.

This bill is necessary, Mr. Thom said, if the Milwaukee is to avoid receivership by June 1, as the reduction in the government rate would enable it to pay the necessary increase in the rate on its bonds to obtain an extension. Senator Howell asked Mr. Thom if he thought the government should lend money on second class security at the same rate at which it borrows on first class security. Mr. Thom replied that he understood that the loans were amply secured by collateral and that when the government has an opportunity to save a great railroad from receivership it should not insist on making a considerable profit above the cost of money it borrows.

The I. C. C. "Tionesta Case"

By J. G. T.

IT sometimes happens that a case at law of trifling significance in the immediate issues may involve principles of far reaching consequence. Such a case is that of the Tionesta Railroad lease handed down on October 29 by the Interstate Commerce Commission. The layman will not be reassured by the type of reasoning that prevailed and the precedents set up. Regulation has gone far; business merely because it is subject to regulation too often has been set upon the defensive and initiative impugned as a fault. It is therefore cheering to hear also in connection with this case, in the dissenting opinion, clear and sharp pronouncements defining again the function and setting the limits to regulation.

Two short intra-state carriers in Pennsylvania, the Susquehanna & New York and the Tionesta Valley, whose stock is held by the Central Leather Company, asked permission of the Interstate Commerce Commission to merge operations by lease of one to the other. The lease had the approval of the Pennsylvania Public Service authorities but the Interstate Commerce Commission denied permission. The economies by consolidation being small the commission found a possible motive in the fact that the merger would defeat the recapture clause of the Commerce Act by withdrawing from recapture the surplus earnings of the road that was prosperous.

Furthermore, both roads being owned by the same industrial concern which they also served as carriers, they were under implication of being primarily industrial railroads under the guise of common carriers. It was urged that improper manipulation of divisions could be better concealed under the merger. One of the concurring commissioners, Mr. Eastman, invoked the commodity clause of the Commerce Act to support his position. In that clause the prohibition lies against ownership of an industry by a railroad. Mr. Eastman sought to reverse these explicit terms and extend the prohibition to apply to an industry owning a railroad, on the ground that there was identity of interest in both cases.

Finally the commission found added reason for denying the application in the circumstance that the applicant had not furnished in another instance, a report requested.

The decision and the supporting reasoning provoked a vigorous dissenting opinion by Commissioner Potter. His analysis and generalizations bid fair to make famous an otherwise unnoticed case. He declared the prospective savings, however slight, were well within the rights of the two carriers. He scorned the suggestion that a body so greatly empowered as this commission could be embarrassed in regulating the divisions with other roads, by the mere merger of two properties. He repudiated the implication that it was the commission's function to "grant or withold a permission (to lease) according to whether or not it makes money from the contingent fund of 15a." . . . "Property owners, so long as they conform to the law, have the right to adjust their ownership so as to enjoy the most favorable applications of the law." . . . "The recapture provision was not intended to be a money making scheme." . . . "A lease otherwise proper cannot become improper because it reduces the amount subject to recapture." As to the neglect of the Tionesta Railroad to furnish a statement requested and the hint of resentment of this failure he scathingly says, "If for this the Tionesta deserves punishment we should find a way to impose it. This application does not present a proper occasion. . . . "

As to the commodities clause in its application to this case, he is explicit—it "has no application to the question now before us." And again "The basic assumption of taint because of identity of interest between the railways and the Leather Company is fundamentally wrong. It is such stretching of the law in reaching out for power that is deplored."

Having exposed the specific fallacies in this particular decision, he chiefly inveighs against them as illustrations of the growing abuse of the regulating powers. "Of course nothing should be done at any time that is not for the public interest. But it must be remembered it is in the public interest to keep individuals and enterprises that make up the public free to do what they please so long as they do not injure the rest of the public or invade their rights. Restraint by regulation in the abstract is abhorrent." . . . "One of the great menaces of the present day is the blight of regulation. It is essential that those in charge of it should dread their power and consequently be alert lest they misuse it." . . . "The purpose of the law is to free, not to fetter industry." . . . "We represent the regulated interest just as much as we represent the regulating power."

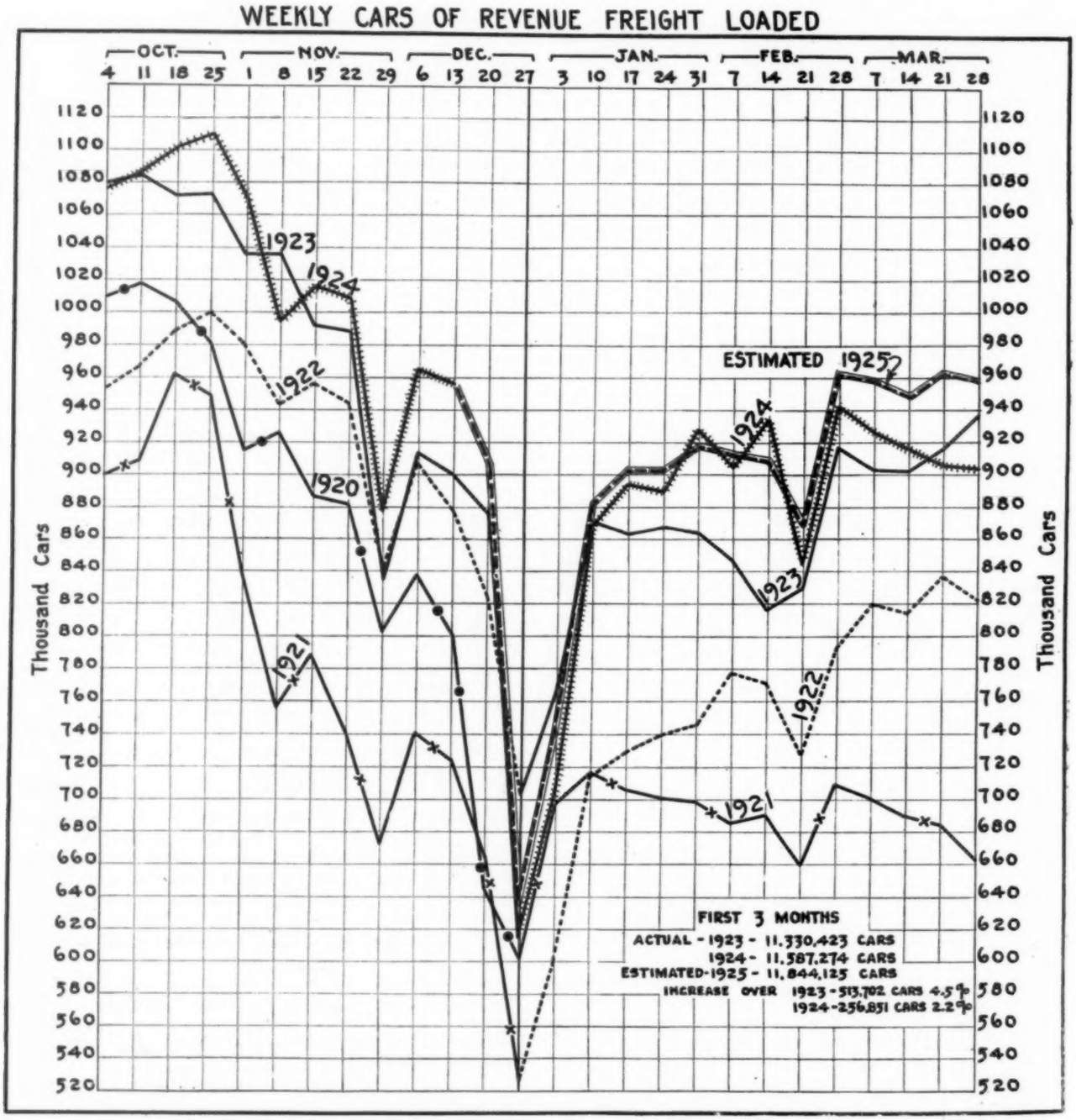
It is to be hoped that conceptions such as these may increasingly dominate the spirit and underlie the practice of regulation.

Revenue Freight Car Loading

Car Service Division estimates increase of 2.2 per cent in first three months of 1925

WASHINGTON, D. C.

REVENUE freight car loading for the 52 weeks ended December 27, aggregated 48,527,227 cars, which was only 1,284,886 cars or 2.6 per cent less than the total loading for the record year 1923. Loading during the last two weeks of December showed the usual seasonal decline but continued to exceed the corresponding figures for the previous year. For the week ended December 27, which included Christmas day, the total was 646,880 cars, an increase of 31,461 as compared with 1923 but a decrease of 57,344 as compared with 1922. For the week ended December 22 the total was 899,776 cars, an increase of 22,049 as compared with the year be-



Estimate by Car Service Division, American Railway Association, of Car Loading to Be Expected in the First Three Months of 1925

fore and an increase of 73,464 as compared with the year 1922.

For the week of December 27 increases as compared with 1923 were shown in all districts except the Eastern and Allegheny and in all classes of commodities except ore. The summaries, as compiled by the Car Service Division of the American Railway Association, for the week of December 27 and also for the week of December 20, which was not included in last week's issue, are as follows:

REVENUE FREIGHT CAR LOADING

Week Ended Saturday, December 27, 1924

Districts	1924	1923	1922
Eastern	153,346	154,281	176,646
Allegheny	136,432	134,465	153,516
Pocahontas	23,389	21,902	25,184
Southern	98,300	82,856	96,959
Northwestern	78,161	75,899	90,369
Central Western	106,512	101,587	113,603
Southwestern	50,740	44,429	47,947
Total Western	235,413	221,915	251,919
Commodities			
Grain and grain products	33,565	31,946	45,492
Live stock	25,230	24,939	25,499
Coal	128,666	112,414	172,132
Coke	11,418	10,311	12,139
Forest products	40,438	36,347	44,714
Ore	6,881	8,183	8,701
Merchandise, l. c. l.	190,879	183,045	177,143
Miscellaneous	209,903	208,234	218,404
Total	646,880	615,419	704,224
December 20	899,776	877,627	826,312
December 13	956,761	899,757	879,052
December 6	968,256	913,921	909,174
November 29	878,631	835,081	840,412
Cumulative total, January 1 to date	48,527,227	49,812,113	43,207,561

Week Ended Saturday, December 20, 1924

Districts	1924	1923	1922
Eastern	207,992	214,964	207,063
Allegheny	184,232	185,340	177,026
Pocahontas	47,810	39,878	28,425
Southern	152,421	130,086	122,770
Northwestern	101,835	111,194	103,472
Central Western	135,555	136,086	132,872
Southwestern	69,931	60,079	54,684
Total Western	307,321	307,359	291,028
Commodities			
Grain and grain products	47,164	47,439	34,988
Live stock	36,320	34,988	30,537
Coal	190,133	183,376	178,568
Coke	11,872	11,394	13,196
Forest products	67,275	67,193	58,416
Ore	10,167	10,792	9,130
Merchandise, l. c. l.	239,683	234,219	216,559
Miscellaneous	297,162	288,226	269,162
Total	899,776	877,627	826,312

Record Traffic Expected for Next Three Months

Loading of revenue freight during the first three months in 1925 is expected to be the greatest in history, according to a report submitted at a meeting in Washington on January 6 of the board of directors of the American Railway Association by the Car Service Division of that organization.

Total loading for the three-months period is estimated at 11,844,125 cars, an increase of 256,851 cars of 2.2 per cent above the total for the first three months in 1924, when the previous high record for that period was made, and 513,702 cars or 4.5 per cent above the same period in 1923.

This estimate is based on information received by the Car Service Division from the commodity committees of the various Shippers' Regional Advisory Boards in regard to their prospective business for the first three months of this year compared with the same periods in 1924 and 1923. In addition, consideration was also given in the preparation of the estimate to other known factors directly relating to car loading. These include the general prosperous business conditions now existing, the trend of traffic during the last three months in 1924, compared with the corresponding periods in previous years, and the first three-months actual loading of previous years.

In view of the fact that Shippers' Regional Advisory Boards have been established in all parts of the country and the various commodity committees of those boards represent agriculture and all other branches of industry, it can be said that this estimate is based on reports from virtually all industrial activities of the nation.

No estimate as to what the total for the year will be, was made, but from information now available it was stated that the indications are that the railroads will be called on to handle the largest carloading business during the year 1925 of any year on record.

The record loading of revenue freight for any one year was reached in 1923 when the total was 49,812,113 cars although during the first three months and the last three months in 1924, revenue freight loadings were the greatest on record. Had it not been for the decline in shipments of coal, coke and ore during the past year, 1924 would have established a new high record as the total loading of all other commodities was the greatest on record.

The number of surplus freight cars continues to increase and for the period December 15-22 averaged 230,798, for the United States. This included 100,330 coal cars and 93,720 box cars. The Canadian roads had a surplus of 21,625 cars, including 17,800 box cars and 200 coal cars.

Car Loading in Canada

Revenue car loadings at stations in Canada for the week ended December 20 amounted to 47,198 cars, a decrease from the previous week of 7,995 cars. A portion of this decrease was seasonal, but the cold weather, especially in western Canada, affected loadings, the decrease in the West being 6,680 cars. Grain loading fell off 4,066 cars, merchandise 977 cars, and miscellaneous freight 1,214 cars. Compared with the same week last year the decrease was 6,858 cars, the decrease in grain being 9,756 cars, with other commodities showing slight increases or decreases.

TOTAL FOR CANADA

Commodity	For the Week Ended Dec. 20 1924	Dec. 13 1924	Dec. 22 1923
Grain and grain products	5,933	9,990	15,689
Live stock	2,344	3,700	2,030
Coal	6,022	6,455	4,195
Coke	292	297	298
Lumber	2,830	2,956	2,918
Pulpwood	2,091	1,810	1,718
Pulp and Paper	2,089	2,101	2,158
Other Forest Products	2,125	2,180	1,774
Ore	978	1,019	931
Merchandise l. c. l.	13,694	14,671	12,864
Miscellaneous	8,800	10,014	9,481
Total cars loaded	47,198	55,193	54,056
Total cars received from connections	31,439	32,461	33,290
Cumulative totals to date—1924			2,868,348
1923			2,808,797

Revenue car loadings at stations in Canada for the week ended December 27 showed a decrease from the previous week of 10,586 cars, which was more or less seasonal. Compared with the same week last year the decrease was 5,821 cars, practically all of it being in grain loading which fell off by 6,434 cars. Miscellaneous freight declined 955 cars, but other commodities showed small increases or decreases.

TOTAL FOR CANADA

Commodity	For the week ended Dec. 27, 1924	Dec. 20, 1924	Dec. 29, 1923
Grain and grain products	4,130	5,946	10,564
Live stock	1,484	2,267	1,291
Coal	5,818	6,021	4,275
Coke	278	294	310
Lumber	1,955	2,832	2,126
Pulpwood	1,643	2,091	1,673
Pulp and paper	1,717	2,089	1,641
Other forest products	1,451	2,127	1,504
Ore	902	980	684
Merchandise, l. c. l.	10,813	13,665	10,989
Miscellaneous	6,295	8,760	7,250
Total cars loaded	36,486	47,072	42,307
Total cars received from connections	26,133	31,138	27,059
Cumulative totals to date—1924	2,904,833	.....	.....
Cumulative totals to date—1923	2,851,110	.....	.....

General News Department

It is rumored in Toronto that the Canadian National has received a tentative offer from or on behalf of the New York, New Haven & Hartford for its lines in Maine, according to a dispatch appearing in the Wall Street Journal.

The Columbus & Greenville gave local employees Christmas presents in the form of bonus checks for faithful service during the year. The road operates between Columbus, Miss., and Greenville, a distance of 167 miles, and was in receivership two years ago.

A conductor on the Denver & Rio Grande Western was awarded $225 by the city councils of Denver, Colo., and Colorado Springs for the apprehension and arrest of two bandits he recognized riding on his train. No reward had been offered for the capture of the men, one of whom had shot a Denver policeman.

New England Railroad Club Meeting

At the next meeting of the New England Railroad Club, to be held at the Copley Plaza Hotel, Boston, on January 13, Herman von Schrenk, consulting timber engineer of the New York Central, will present a paper on the Preservation of Forest Products.

Bandit Murders Express Messenger

The express messenger of the Viking, the fast Chicago & North Western day train between Minneapolis and Chicago, was murdered by a lone train robber who attempted to rob the express car of the large sum of money it was carrying on December 30. The messenger was shot and killed when he attempted to overpower and disarm the bandit as the train was entering the suburbs of Chicago. After locking up the conductor and the baggageman, the robber made his escape without securing any valuables.

New Mexico State Will Oppose Acquisition of New Mexico Central by Santa Fe

The state of New Mexico will oppose any attempt by the Interstate Commerce Commission to allocate the New Mexico Central Railroad to the Atchison, Topeka & Santa Fe System group, according to the State Corporation Commission. The commission requests that the New Mexico Central be assigned to the Southern Pacific-Rock Island group in order to insure the development and growth of the state.

Soo Line Engineman Commits Suicide After Fatal Accident

The engineman of the Minneapolis, St. Paul & Sault Ste. Marie passenger train, the rear coach of which fell into the Chippewa river near Chippewa Falls, Wis., on December 20, resulting in the death of eight passengers, committed suicide by hanging on December 31. He had been an engineman for 21 years and had never been in an accident before. On December 20 he substituted for the regular engineer of the Minneapolis-Chicago train.

Express Company's Payroll at La Salle Street Station Taken by Bandits

Three bandits held up the American Railway Express office in the LaSalle street station, Chicago, on January 2, and two escaped with $18,000, which comprised the day's payroll. The three men, each displaying two revolvers, entered the office which joins the south end of the train shed, shortly before two p. m. and while two guarded the six employees in the office the third picked up the canvas bag containing the payroll. After leaving the office the men entered the train shed and separated. One of the bandits was caught by a clerk while the other two escaped.

New York Railroad Club Meeting

The program of the meeting of the New York Railroad Club which will be held in the Engineering Societies Building, New York, on Friday evening, January 16, will include two unusual features. Several experts will each give a short talk on the possibilities of the steam locomotive. The announcement of the meeting contains the statement that there are many who believe that we are just on the verge of a great advance in the efficiency of the steam locomotive and that an effort will be made in the discussion to point out the possibilities of improvement. A moving picture film provided through the courtesy of the South Manchuria Railway Company will also be shown.

Annual Meeting of the A. S. C. E.

The annual meeting of the American Society of Civil Engineers which will be held at the Engineering Societies Building, New York, on January 21-23, has a program in which there are a number of reports scheduled of close interest to the steam railways. Among the reports of this nature are those on Stresses in Structural Steel, Stresses in Railroad Track, Electrification of Steam Railways, Concrete and Reinforced Concrete Arches and others which will be presented at the afternoon session on the first day following the morning business session. The conferring of honorary memberships and the awarding of medals will be included in the morning session. The second day will be devoted to the meetings of the technical divisions such as highways, sanitary engineering, city planning, power and the structural division, the latter being the organization meeting for this division. The last day will be given over to an all-day excursion and inspection of the military academy at West Point.

Illinois Central Enjoined from Operating or Financing New Cut-Off Line

A temporary injunction restraining the Illinois Central from operating or financing its 165-mile cut-off line from Edgewood, Ill., to Fulton, Ky., was granted to the attorney general of Illinois by Judge Charles M. Foell, of the Superior Court at Chicago on January 6. The court denied the petition to enjoin also the construction of the line. The line is now being constructed by the Southern Illinois & Kentucky and the Chicago, St. Louis & New Orleans as subsidiaries of the Illinois Central. Hearing to make the temporary injunction permanent will be held later, the exact date not having been decided. Injunction was asked by Attorney General of Illinois on demand of citizens of Cairo, Ill., and other communities on the present main line of the Illinois Central who have feared that the operation of the cut-off line would impair the service now provided them. President Markham of the Illinois Central has promised that this would not occur. The construction of the new line which has already begun at several points will continue without delay.

The New York Central Offers Stock to Employees at $110 a Share

The New York Central announced on Monday that it would offer to all officers and employees in the service, totaling about 175,000, an opportunity to purchase New York Central stock on a time payment plan at a price of $110 a share. Subscriptions are to be received from January 7 to January 31 inclusive. The official announcement of the plan states:

"The stock is offered at $110 per share, whereas the market price of the stock today was above $120 a share. The plan provides that the stock be paid for in monthly installments of from $5 to $15 per share. During the period of payment interest at 4 per cent will be charged on deferred payments and dividends will be credited to the account of the subscriber.

"Each employee is entitled to subscribe for one share of stock

for every $200 of his annual rate of pay, but no subscription may be for more than twenty shares."

This is the second time that the New York Central has offered an opportunity to its employees to buy stock. At the close of 1922 a plan was in effect whereby employees could buy stock at the current market price, then about $95 a share.

New Committee in Charge of Container Bureau

The American Railway Association recently created a Joint Committee of Co-operation, composed of representatives of the traffic, transportation, freight claim division and freight classification committees which will hereafter supervise the activities of the Freight Container Bureau. This bureau has, during the past two years, been successful in securing a wide adoption of adequate containers for freight shipments, preventing loss and damage to contents—a benefit to the carriers and the shipping public alike.

The work will continue under the direction of Colonel B. W. Dunn, chief engineer, who is also in charge of the Bureau of Explosives, which has done very effective work in reducing loss and damage in the transportation of such commodities.

The following constitute the Joint Committee of Co-operation, with F. W. Smith as chairman:

TRANSPORTATION DIVISION REPRESENTATIVES

Eastern Territory	F. W. B. Humes, Superintendent Stations and Transfers, Pennsylvania.
Southern Territory	A. C. Kenly, Superintendent of Freight, Atlantic Coast Line.
Western Territory	Col. A. S. Dodge, Manager, Western Weighing and Inspection Bureau.

TRAFFIC DIVISION REPRESENTATIVES

Eastern Territory	Robt. C. Wright, General Traffic Manager, Pennsylvania.
Western Territory	J. F. Holden, Vice-President, Kansas City Southern.
Southern Territory	James Menzies, Freight Traffic Manager, Atlantic Coast Line.

FREIGHT CLAIM DIVISION REPRESENTATIVES

Eastern Territory	T. C. Smith, Freight Claim Agent, Central of New Jersey.
Southern Territory	H. T. Lively, General Claim Agent, Louisville & Nashville.
Western Territory	C. H. Dietrich, Freight Claim Agent, Chicago, Milwaukee & St. Paul.

CLASSIFICATION COMMITTEE REPRESENTATIVES

Official Classification Committee	F. W. Smith, Chairman, Official Classification Committee.
Southern Classification Committee	F. H. Dulaney, Chairman, Southern Classification Committee.
Western Classification Committee	R. C. Fyfe, Chairman, Western Classification Committee.

A. R. E. A. Nominates Officers

The nominating committee of the American Railway Engineering Association has nominated the following officers for the ensuing year. Ballots will be issued to the members early in February and the election will be announced at the annual convention. The following have been nominated:

For president, J. M. R. Fairbairn, chief engineer, Canadian Pacific.

For vice-president, D. J. Brumley, chief engineer, Chicago Terminal Improvements, Illinois Central.

For secretary, E. H. Fritch.

For treasurer, George H. Bremner, engineering department, Chicago, Burlington & Quincy.

For directors (three to be elected), G. D. Brooke, assistant to vice-president, Chesapeake & Ohio; W. H. Hoyt, chief engineer, Duluth, Missabe & Northern; C. E. Johnston, vice-president and general manager, Kansas City Southern; W. H. Kirkbride, engineer maintenance of way and structures, Southern Pacific; G. L. Moore, engineer maintenance of way, Lehigh Valley; F. P. Patenall, signal engineer, Baltimore & Ohio; H. J. Pfeifer, chief engineer, Terminal Railroad Association of St. Louis; A. O. Ridgway, chief engineer, Denver & Rio Grande Western; and L. S. Rose, general manager, Peoria & Eastern.

For members of the nominating committee (five to be elected), W. R. Armstrong, assistant chief engineer, Oregon Short Line; A. F. Dorley, district engineer maintenance of way, Missouri Pacific; H. E. Hale, group engineer, Presidents' Conference Committee; T. T. Irving, chief engineer, Central region, Canadian National Railways; J. C. Irwin, valuation engineer, Boston & Albany; J. B. Jenkins, valuation engineer, Baltimore & Ohio; C. R. Knowles, superintendent water service, Illinois Central; B. R. Leffler, bridge engineer, New York Central; J. deN. Macomb, office engineer, Atchison, Topeka & Santa Fe; and A. Montzheimer, chief engineer, Elgin, Joliet & Eastern.

Howell-Barkley Bill Not Pressed in House

Efforts to have the Howell-Barkley labor bill considered in the House have been again postponed, for the third time since Congress met in December. Representative Barkley, one of the sponsors of the bill which was drafted by the railroad labor organizations, announced in the House on January 2 that in view of "the chances for early consideration of the bill in the Senate" the friends of the measure, "both in and out of Congress," felt that it was not desirable for the present to press for consideration in the House and that therefore the bill would not be called up on Monday, January 5, the next day on which its consideration could be sought. The bill, having been taken from the committee on interstate and foreign commerce, is on a calendar which comes up only on alternate Mondays and it has not been called up at this session because the first day was the opening day of Congress and the second, December 15, was set aside for memorial exercises in honor of Woodrow Wilson. Mr. Barkley said he was advised that members of the Senate committee on interstate commerce and other friends of the bill in the Senate were "seeking, with fair chances of success, to compose any existing difference of opinion regarding amendments proposed by the Senate committee, in the hope of securing harmonious action and satisfactory consideration of the bill in the Senate." Representatives of the labor unions have been seeking to have the Senate committee modify the amendment it reported to the bill, which would provide for the appointment by the President of a fact-finding commission in case of a threatened strike, while Senator Cummins has been trying to find a basis on which some sort of agreement might be reached between the railroads and the unions which would remove some of the objections now made to the bill. Senator Cummins himself is not satisfied with the "fact-finding" commission, but wants provision made for a "board of decision," and as the unions object even to a fact-finding commission it is understood that he is encountering some difficulty in finding a basis of agreement. He has held some conferences with representatives of both the unions and the railroad executives and is understood to be continuing his efforts to bring about a conference of representatives of both sides.

Canadian Supreme Court to Hear Appeal on Crow's Nest Rates on February 3

After a brief argument a few days ago the Supreme Court of Canada fixed February 3 as the date for the hearing of the appeal of the three prairie provinces from the ruling of the Dominion Railway Board of October 14 last setting aside the Crow's Nest Pass Agreement as a factor in Canadian freight rates. That appeal will be on questions of law only; an appeal by the same provinces on questions of fact and merit was heard by the federal Cabinet late in November and its finding, made known on Christmas Day, ordered the restoration of the agreement until such time as the Railway Board might make a new order following the appeal to the Supreme Court in February.

That the Dominion government has in mind the question of a standardization of freight rates without discrimination throughout the Dominion is generally believed, and was hinted at last week when George P. Graham, Minister of Railways and Canals, sent a wire to W. H. Woods, of the Brantford Chamber of Commerce, who had expressed fears of the discrimination which would arise from the restoration of the Crow's Nest Agreement, as ordered by the Cabinet on Christmas Day. Mr. Graham's wire follows:

"It is possible that inconvenience will result on account of the suspension of the operation of the finding of the Board of Railway Commissioners regarding the Crow's Nest Pass Agreement rates, but it is hoped that a way will be found for a reorganization of the rate structure which will be applicable and just to all parts of the Dominion."

It is pointed out in government circles at Ottawa that the Crow's Nest Agreement was not the only one of the kind made in the history of railway operation in Canada. There have been several almost exactly similar pacts entered into on the taking over of small lines. Some years ago the federal government took over a small branch line in Nova Scotia which was to be the nucleus of a much longer road. The latter has not yet been constructed, although it has been before Parliament on many occasions.

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF NOVEMBER AND ELEVEN MONTHS OF CALENDAR YEAR 1924

Name of road		Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of: Way and structures.	Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after rents.	Net after rents, 1923.
Akron, Canton & Youngstown	Nov.	170	$236,612	$459	$250,213	$32,532	$28,296	$10,810	$73,084	$12,993	$157,715	63.00	$92,498	$86,281	$50,929	$35,198
	11 mos.	170	2,471,810	7,211	2,580,301	340,980	260,331	106,492	716,308	112,717	1,533,957	59.40	1,046,344	916,027	601,753	470,698
Alabama & Vicksburg	Nov.	141	230,176	55,653	306,652	53,859	49,292	10,372	95,860	13,616	223,809	73.00	82,843	55,689	56,771	27,127
	11 mos.	141	2,381,649	685,272	3,292,045	568,665	646,354	105,751	1,080,698	151,263	2,573,035	78.20	719,010	436,487	474,331	539,553
Vicksburg, Shreveport & Pacific	Nov.	188	270,048	76,741	375,191	91,440	50,438	13,660	129,328	16,409	296,159	78.90	79,032	53,253	40,495	38,692
	11 mos.	188	2,694,571	929,819	3,908,090	746,189	615,264	133,248	1,377,363	168,198	3,060,160	78.30	847,930	596,394	432,086	687,856
Ann Arbor	Nov.	293	456,250	28,903	502,921	40,280	95,795	9,153	215,787	14,212	375,246	73.60	127,675	98,497	112,708	98,008
	11 mos.	293	4,442,787	404,463	5,053,948	641,130	960,740	102,765	2,078,559	156,959	3,940,386	78.00	1,113,562	852,783	614,056	378,754
Atchison, Topeka & Santa Fe	Nov.	9,131	12,986,837	3,005,919	17,435,455	2,168,098	3,059,424	358,620	4,878,880	359,595	10,774,262	61.80	6,661,193	4,869,198	4,946,599	3,985,575
	11 mos.	9,062	123,389,162	39,139,041	177,699,698	27,870,716	40,499,727	3,423,903	55,216,896	3,850,751	129,766,331	73.00	47,933,367	33,293,739	34,712,601	38,134,140
Gulf, Colorado & Santa Fe	Nov.	1,908	3,156,693	324,808	3,621,473	519,105	519,349	49,323	816,524	66,232	1,965,356	54.30	1,656,117	1,560,764	1,452,805	961,499
	11 mos.	1,908	21,867,490	3,709,722	27,004,937	5,229,704	5,744,096	508,268	7,872,730	703,053	20,027,151	74.20	6,977,786	6,015,355	5,109,071	3,488,869
Panhandle & Santa Fe	Nov.	858	1,020,228	130,339	1,201,554	Cr. 20,634	186,887	9,448	314,479	19,308	507,036	42.20	694,518	611,550	556,309	317,291
	11 mos.	858	8,131,608	1,370,429	10,010,298	1,405,099	2,349,056	88,022	2,854,022	203,665	6,893,528	68.90	3,116,770	2,736,934	2,260,535	959,405
Atlanta & West Point	Nov.	93	146,097	71,395	251,158	33,512	43,999	9,753	94,673	11,069	197,999	78.80	53,159	37,799	25,071	39,243
	11 mos.	93	1,512,512	793,996	2,649,520	364,950	478,076	98,030	978,857	120,537	2,091,439	78.90	558,081	417,869	289,762	363,540
Western of Alabama	Nov.	133	177,980	69,901	272,757	45,773	46,639	9,938	81,463	10,722	198,965	72.90	73,792	60,262	55,982	54,352
	11 mos.	133	1,815,192	751,162	2,835,921	374,038	548,306	107,205	865,478	119,878	2,062,138	72.70	773,783	623,832	542,800	572,629
Atlanta, Birmingham & Atlantic	Nov.	639	331,958	45,105	403,004	75,781	86,837	22,979	158,432	16,625	360,716	89.50	42,288	29,362	12,597	14,685
	11 mos.	639	3,534,937	511,739	4,376,106	814,718	951,127	250,474	1,806,602	179,510	4,003,172	91.50	372,934	231,211	96,319	—157,860
Atlantic Coast Line	Nov.	4,867	4,928,945	1,284,388	6,788,950	863,395	1,408,326	136,226	2,386,492	147,147	4,972,092	73.20	1,816,858	1,215,560	1,224,906	1,397,934
	11 mos.	4,865	51,710,828	16,069,522	73,769,503	9,768,566	15,405,497	1,376,208	26,398,842	1,674,478	54,987,253	74.50	18,782,250	13,740,088	13,304,781	13,896,116
Charleston & Western Carolina	Nov.	342	266,803	30,768	313,679	29,237	37,442	7,047	123,769	6,390	203,885	65.00	109,794	92,103	83,947	5,652
	11 mos.	342	3,029,128	345,044	3,537,001	634,598	538,128	78,282	1,432,266	75,732	2,759,006	78.00	777,995	584,494	483,053	526,324
Baltimore & Ohio	Nov.	5,303	15,446,504	2,008,906	18,732,803	2,175,403	4,345,382	331,497	7,192,640	479,360	14,678,121	78.40	4,054,682	3,365,061	2,893,364	2,571,596
	11 mos.	5,303	165,672,281	26,644,960	205,103,636	24,741,859	44,435,033	3,913,270	78,102,198	5,664,655	158,430,350	76.90	47,673,286	38,545,012	35,154,855	41,529,435
Baltimore & Ohio Chicago Term.	Nov.	80	.....	.....	280,897	34,125	45,240	2,140	177,353	24,458	286,880	102.10	—5,983	—46,256	128,696	130,323
	11 mos.	80	.....	.....	3,274,572	558,446	543,582	21,077	1,905,307	135,516	3,204,790	97.90	69,782	—359,945	380,984	530,494
Staten Island Rapid Transit	Nov.	23	100,706	95,736	220,708	55,536	31,981	2,006	122,955	14,201	226,679	102.70	—5,971	—21,674	—36,362	—35,392
	11 mos.	23	1,020,749	1,223,227	2,550,653	613,193	355,561	23,155	1,341,560	164,908	2,498,377	98.00	52,276	—122,799	—269,509	—235,357
Bangor & Aroostook	Nov.	616	569,912	52,269	646,545	95,208	128,581	3,921	161,394	19,603	409,958	63.40	236,587	185,677	220,484	234,512
	11 mos.	616	5,344,986	706,550	6,319,550	1,132,424	1,439,323	46,670	1,799,669	219,665	4,657,355	73.70	1,662,195	1,186,114	1,598,869	1,502,039
Belt Ry. Co. of Chicago	Nov.	32	.....	.....	566,650	40,657	56,420	3,176	248,051	9,113	357,417	63.10	209,233	158,547	134,314	133,213
	11 mos.	32	.....	.....	6,283,352	563,325	613,932	31,594	2,843,129	113,289	4,165,269	66.30	2,118,083	1,631,937	1,602,214	1,741,046
Bessemer & Lake Erie	Nov.	228	772,015	15,355	805,976	111,330	347,559	13,325	271,704	29,866	770,469	95.60	35,507	3,004	76,527	460,446
	11 mos.	228	13,223,108	264,496	13,732,739	1,476,874	4,880,635	165,579	3,828,874	328,211	10,589,265	77.10	3,143,114	2,285,210	2,753,564	7,102,646
Bingham & Garfield	Nov.	33	41,550	304	43,550	8,977	13,578	1,088	11,384	4,366	39,617	91.00	3,933	—3,313	10,401	25,044
	11 mos.	34	434,954	391	451,415	111,041	72,252	16,204	120,165	52,153	373,701	82.80	77,714	—28,553	128,711	161,832
Boston & Maine	Nov.	2,287	4,122,853	1,473,100	6,335,945	877,212	1,230,140	60,592	2,731,172	215,862	5,138,409	81.10	1,197,536	937,120	703,259	404,655
	11 mos.	2,287	43,508,953	19,586,107	71,695,655	9,241,975	14,809,867	634,704	31,088,376	2,510,121	58,531,534	81.60	13,164,121	10,375,144	7,846,533	2,770,644
Brooklyn Eastern District Term.	Nov.	9	102,488	.....	108,957	5,812	12,366	178	41,936	5,725	66,017	60.60	42,940	35,809	37,009	32,778
	11 mos.	9	1,202,046	.....	1,277,312	88,304	151,761	3,347	479,578	57,994	780,984	61.10	496,328	418,464	431,344	483,073
Buffalo & Susquehanna R. R. Corp.	Nov.	253	162,200	3,996	169,772	33,819	67,986	1,717	50,140	9,886	163,548	96.30	6,224	—580	30,587	7,976
	11 mos.	253	1,626,937	52,265	1,719,546	378,155	738,965	21,236	545,835	101,744	1,785,935	103.90	—66,389	—124,906	178,672	575,947
Buffalo, Rochester & Pittsburgh	Nov.	591	1,072,828	114,635	1,243,543	151,714	318,623	23,397	461,206	39,780	995,004	80.00	248,539	206,490	266,381	220,351
	11 mos.	591	12,496,261	1,488,562	14,672,948	1,580,271	4,415,564	277,851	5,743,489	449,563	12,483,014	85.10	2,189,934	1,826,053	2,312,552	2,743,204
Canadian Pacific, Lines in Maine	Nov.	233	163,015	26,772	205,328	21,114	33,387	4,441	96,149	3,274	158,365	77.10	46,963	35,963	32,038	25,620
	11 mos.	233	1,762,516	364,113	2,290,941	628,529	465,597	52,824	1,039,852	38,840	2,225,642	97.20	65,299	—55,701	—182,263	—167,465
Carolina, Clinchfield & Ohio	Nov.	309	735,582	31,972	779,058	90,889	219,531	24,310	154,414	34,178	523,060	67.10	255,998	185,564	283,413	202,367
	11 mos.	309	7,350,655	409,955	7,917,002	965,484	1,951,870	284,025	1,962,755	245,935	5,405,840	68.30	2,511,162	1,920,361	2,486,020	2,479,457
Central of Georgia	Nov.	1,920	1,748,668	422,882	2,381,646	406,970	396,174	68,790	829,436	88,054	1,786,601	75.00	595,045	478,975	447,445	313,863
	11 mos.	1,920	17,721,083	4,887,495	24,809,034	3,913,784	4,429,357	748,811	9,229,319	978,668	19,275,916	77.70	5,533,118	4,339,642	4,174,455	3,702,766
Central of New Jersey	Nov.	691	3,489,850	695,829	4,449,706	458,921	385,782	40,293	1,718,608	107,252	2,731,017	61.40	1,718,689	1,313,602	1,256,572	409,286
	11 mos.	692	39,140,652	8,949,445	51,159,980	5,584,714	9,277,666	415,275	19,994,228	1,184,099	36,667,612	71.70	14,462,368	10,268,006	9,369,519	4,974,864
Central Vermont	Nov.	434	480,000	76,400	616,104	103,650	91,358	13,779	292,096	21,953	524,338	85.10	91,766	72,331	41,398	9,713
	11 mos.	434	5,881,742	1,154,761	7,803,474	1,478,602	1,272,971	152,503	3,524,478	257,017	6,693,041	85.80	1,110,433	900,952	558,690	120,621
Chesapeake & Ohio	Nov.	2,555	8,009,447	794,991	9,196,379	1,464,703	2,731,540	94,937	2,826,751	203,513	7,343,266	79.90	1,853,113	1,457,107	1,565,193	879,492
	11 mos.	2,555	84,496,507	9,949,225	98,948,809	14,258,417	27,760,759	1,075,338	29,998,440	2,300,813	75,702,755	76.50	23,246,054	19,030,079	20,338,773	17,796,729
Chicago & Alton	Nov.	1,050	1,864,613	484,883	2,568,462	376,951	685,318	69,611	974,818	54,527	2,156,937	84.00	411,525	303,121	178,102	317,217
	11 mos.	1,050	19,928,507	5,912,733	28,337,674	3,868,082	6,620,790	716,881	10,303,864	653,271	22,056,035	77.80	6,281,639	5,206,269	4,020,525	4,826,807
Chicago-Eastern Illinois	Nov.	945	1,572,919	340,921	2,069,948	198,690	681,404	58,977	811,184	70,008	1,832,459	88.50	237,489	100,180	53,640	276,681
	11 mos.	945	17,558,134	4,262,942	23,641,517	2,433,277	7,141,490	571,715	9,444,470	741,602	20,482,685	86.60	3,158,832	1,836,190	1,212,948	3,064,378
Chicago & North Western	Nov.	8,462	8,333,419	2,021,488	11,680,009	1,758,403	2,450,998	181,024	4,697,011	332,416	9,468,161	81.10	2,211,848	1,409,405	1,056,491	1,608,625
	11 mos.	8,462	96,301,140	26,519,534	138,056,417	21,315,908	28,373,398	1,851,498	55,610,143	3,791,946	111,608,084	80.80	26,448,333	17,987,355	15,528,645	14,045,013
Chicago, Burlington & Quincy	Nov.	9,407	10,375,653	1,884,654	13,445,250	1,696,636	2,928,452	263,901	4,788,388	333,931	10,068,055	74.90	3,377,195	2,491,022	2,139,779	3,060,852
	11 mos.	9,408	110,249,496	24,292,582	149,023,457	18,265,894	31,567,997	2,642,286	52,710,530	3,879,483	109,884,211	73.70	39,139,246	29,462,128	26,450,794	22,581,064
Chicago Great Western	Nov.	1,496	1,671,236	278,180	2,123,551	284,125	377,354	67,541	861,523	51,695	1,654,339	77.90	469,212	390,620	228,434	210,893
	11 mos.	1,496	17,249,390	3,570,998	22,676,156	3,469,989	4,410,062	737,052	9,311,977	591,955	18,651,243	82.30	4,024,913	3,184,061	2,000,668	1,720,083

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF NOVEMBER AND ELEVEN MONTHS OF CALENDAR YEAR 1924—CONTINUED

Name of road		Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after rents.	Net after rents, 1923.
Chicago, Indianapolis & Louisville	Nov.	654	$1,045,717	$224,018	$1,397,075	$144,356	$321,655	$33,015	$506,819	$33,419	$1,053,365	75.40	$343,710	$271,390	$161,217	$195,176
	11 mos.	654	11,356,500	2,778,147	15,638,462	1,630,064	3,299,257	367,416	5,575,110	375,546	11,402,781	72.90	4,235,681	3,376,182	2,012,564	2,167,217
Chicago, Milwaukee & St. Paul	Nov.	10,986	10,863,150	1,493,934	13,673,524	1,593,666	2,829,559	207,205	5,086,658	315,179	10,091,816	73.80	3,581,708	2,869,490	2,465,405	2,494,285
	11 mos.	10,986	110,446,233	19,935,005	145,404,840	21,297,729	31,580,148	2,232,003	56,464,881	3,592,298	115,884,174	79.70	29,520,666	21,092,463	16,710,908	17,722,368
Chicago, Peoria & St. Louis	Nov.	247	94,033	8,053	111,378	27,113	23,844	1,517	55,148	7,155	114,777	103.10	—3,399	—8,280	—32,477	—18,294
	11 mos.	247	947,847	131,346	1,191,738	220,022	202,266	18,779	607,099	87,874	1,136,040	95.30	55,698	12,621	—221,666	—196,675
Chicago River & Indiana	Nov.	19	.....	.....	569,701	78,447	66,446	837	221,374	12,180	379,284	66.60	190,417	151,965	282,920	287,000
	11 mos.	19	.....	.....	6,343,093	836,946	733,878	9,654	2,495,099	129,403	4,204,980	66.30	2,138,113	1,728,991	2,911,152	3,054,314
Chicago, Rock Island & Pacific	Nov.	7,576	7,792,494	1,863,899	10,476,533	1,204,498	2,189,729	225,154	3,906,545	279,040	7,844,821	74.90	2,631,712	2,059,181	1,770,051	1,652,546
	11 mos.	7,612	82,641,671	22,805,249	113,785,651	13,225,274	25,112,272	2,273,101	44,979,824	3,163,568	88,979,218	78.20	24,806,433	18,821,425	14,215,597	12,608,172
Chicago, Rock Island & Gulf	Nov.	461	540,871	72,624	658,206	66,073	70,039	14,289	219,547	15,397	389,121	59.10	269,085	252,983	239,781	214,377
	11 mos.	461	4,763,425	837,662	6,060,474	834,242	757,075	157,707	2,313,008	178,433	4,267,999	70.40	1,792,475	1,650,800	1,287,427	642,223
Chic., St. Paul, Minn. & Omaha	Nov.	1,749	1,701,001	368,184	2,240,352	226,444	373,991	27,522	957,783	72,776	1,662,935	74.20	577,417	437,223	372,110	374,499
	11 mos.	1,749	18,489,392	5,218,925	25,664,233	3,529,135	4,672,091	363,997	10,952,079	802,968	20,399,714	79.50	5,264,519	3,754,045	3,111,595	2,601,876
Cincinnati, Indianapolis & Western	Nov.	347	329,931	27,952	383,544	47,926	76,575	14,528	158,307	17,115	315,433	82.20	68,111	45,896	46,471	—1,225
	11 mos.	347	3,499,893	351,314	4,112,155	568,320	882,240	153,521	1,655,932	195,978	3,463,895	84.20	648,260	442,587	248,881	269,458
Colorado & Southern	Nov.	1,057	990,466	133,481	1,206,717	112,853	238,314	13,621	412,789	38,862	823,622	68.30	383,095	319,217	293,190	209,788
	11 mos.	1,094	9,073,703	1,730,558	11,732,103	1,524,888	2,624,938	152,790	4,423,750	469,570	9,287,001	79.20	2,445,102	1,752,381	1,629,164	664,728
Ft. Worth & Denver City	Nov.	456	956,607	241,443	1,252,532	66,157	159,486	14,439	298,460	33,756	578,689	46.20	673,843	607,210	584,265	402,235
	11 mos.	456	7,332,824	1,979,891	9,862,684	885,518	1,859,012	160,506	2,719,684	384,532	6,053,885	61.40	3,808,799	3,303,789	3,302,100	2,509,816
Wichita Valley	Nov.	271	177,853	31,834	221,954	18,195	7,770	63	49,953	1,517	76,985	34.70	144,969	130,598	99,404	67,590
	11 mos.	271	1,301,958	283,811	1,683,680	228,678	111,120	278	482,359	20,860	834,722	49.60	848,958	748,172	526,007	330,142
Columbus & Greenville	Nov.	167	118,473	33,863	161,481	35,577	21,992	3,196	60,401	10,790	131,567	81.50	29,914	28,403	10,663	11,505
	11 mos.	167	1,113,419	301,797	1,498,931	430,020	200,842	29,603	540,458	107,138	1,304,972	87.10	193,959	177,843	44,551	4,019
Delaware & Hudson	Nov.	894	3,197,072	174,578	3,587,564	346,624	1,097,882	47,335	1,277,364	138,263	2,932,157	81.70	655,407	552,297	605,514	421,065
	11 mos.	894	35,276,451	3,522,370	41,140,848	4,828,726	11,010,716	522,079	15,254,844	1,524,944	33,380,581	81.10	7,760,267	6,619,505	7,046,363	5,980,901
Delaware, Lackawanna & Western	Nov.	992	5,545,892	1,027,737	7,321,661	502,139	1,519,557	114,814	2,820,904	153,660	5,158,972	70.50	2,162,689	1,510,678	1,544,600	1,376,094
	11 mos.	992	58,083,352	12,497,464	79,414,174	7,106,102	17,089,095	1,285,617	31,188,099	1,754,744	58,989,278	74.30	20,424,896	14,184,824	14,789,446	12,350,584
Denver & Rio Grande Western	Nov.	2,598	2,498,406	340,449	3,040,370	463,563	741,994	51,790	968,531	82,927	2,321,193	76.30	719,177	588,915	547,551	728,066
	11 mos.	2,603	22,947,954	4,818,689	30,279,664	5,838,416	8,063,881	563,798	9,987,584	945,298	25,662,173	84.80	4,617,491	2,846,214	3,200,795	2,932,044
Denver & Salt Lake	Nov.	255	362,050	23,796	409,006	63,356	106,144	1,157	118,196	6,549	295,402	72.20	113,604	104,599	981,155	26,362
	11 mos.	255	2,472,108	298,675	3,039,619	840,063	1,023,963	14,109	920,964	72,175	2,871,274	94.50	168,345	69,331	100,778	28,142
Detroit & Mackinac	Nov.	378	115,458	16,557	147,077	29,275	37,420	1,903	53,747	6,791	129,134	87.80	17,943	7,728	12,130	33,415
	11 mos.	376	1,378,111	276,436	1,815,971	333,992	416,596	22,350	649,297	70,584	1,488,795	82.00	327,176	209,983	279,469	136,709
Detroit & Toledo Shore Line	Nov.	61	289,297	.....	293,757	25,569	28,386	2,401	83,921	6,553	146,830	50.00	146,927	116,751	42,103	24,810
	11 mos.	61	3,083,739	.....	3,126,377	345,908	315,306	31,095	974,724	79,586	1,746,619	55.90	1,379,758	1,123,385	296,959	668,768
Detroit Terminal	Nov.	26	.....	.....	174,756	15,746	11,210	.....	100,993	4,540	132,489	75.81	42,267	26,722	30,594	45,106
	11 mos.	26	.....	.....	2,131,768	299,575	131,447	97	1,091,176	23,336	1,545,631	72.50	586,137	373,453	505,611	506,202
Detroit, Toledo & Ironton	Nov.	469	1,008,635	6,017	1,034,791	150,633	165,864	6,452	289,542	24,982	636,907	61.50	397,884	353,919	152,786	140,614
	11 mos.	468	10,775,018	90,425	11,071,704	1,660,257	1,790,044	78,598	3,106,642	276,496	6,894,196	62.30	4,177,508	3,793,895	2,447,086	1,795,291
Duluth & Iron Range	Nov.	275	114,122	8,025	144,276	59,638	104,506	1,312	110,430	16,712	293,018	203.10	—148,742	—154,409	—154,931	60,283
	11 mos.	279	5,223,382	125,938	5,861,303	1,086,908	1,336,052	12,739	1,876,931	218,452	4,530,760	77.30	1,330,543	525,776	525,139	2,071,600
Duluth, Missabe & Northern	Nov.	304	202,273	7,088	234,226	132,388	152,193	3,146	148,782	22,043	459,221	196.10	—224,995	—243.188	—244,659	928,522
	11 mos.	305	12,690,477	112,203	13,754,515	1,855,623	2,031,538	34,447	2,795,947	224,579	6,949,768	50.50	6,804,747	4,336,030	4,278,384	11,094,616
Duluth, South Shore & Atlantic	Nov.	591	291,601	80,664	414,546	43,009	79,358	6,505	207,223	11,137	352,676	85.10	61,870	29,870	17,955	67,866
	11 mos.	591	3,996,071	1,026,161	5,523,207	948,723	885,246	69,987	2,352,503	123,547	4,440,225	80.40	1,082,982	735,879	462,144	557,252
Duluth, Winnipeg & Pacific	Nov.	178	147,625	14,872	171,673	38,365	37,144	3,564	65,575	6,978	152,470	88.80	19,203	10,972	24,052	18,485
	11 mos.	178	1,714,098	197,174	1,985,828	407,515	385,643	38,003	801,330	100,848	1,745,070	88.00	240,758	140,956	208,059	43,228
Elgin, Joliet & Eastern	Nov.	459	1,570,220	6	1,713,715	135,037	362,855	12,367	623,257	39,319	1,172,618	68.40	541,097	464,047	331,169	329,973
	11 mos.	459	17,824,951	511	19,558,052	2,015,959	4,357,144	134,635	6,938,517	447,499	13,890,544	71.00	5,667,508	4,712,658	3,089,275	5,422,045
El Paso & Southwestern	Nov.	Included in Southern Pacific beginning November 1.														
	11 mos.	Included in Southern Pacific beginning November 1.														
Erie R. R	Nov.	2,039	6,759,139	997,699	8,434,962	678,551	2,089,603	156,872	3,449,050	286,338	6,701,401	79.40	1,733,561	1,405,998	1,551,082	1,605,244
	11 mos.	2,039	77,193,540	12,090,567	97,043,594	11,582,802	25,821,546	1,609,018	37,685,913	3,127,055	80,284,075	82.70	16,759,519	12,960,800	14,670,156	16,135,733
Chicago & Erie	Nov.	269	970,680	54,982	1,109,788	106,605	132,661	26,000	426,207	38,932	727,698	65.60	382,090	333,759	—1,310	222,595
	11 mos.	269	11,207,439	705,719	12,936,782	1,397,719	1,654,274	251,117	4,463,016	406,138	8,165,243	63.10	4,771,539	4,200,621	1,006,915	232,796
New Jersey & New York	Nov.	45	23,119	100,503	128,719	13,546	16,958	1,262	70,141	3,076	104,983	81.60	23,736	20,381	—9,331	—19,138
	11 mos.	45	256,601	1,143,615	1,456,928	215,663	219,032	14,137	714,102	38,579	1,201,481	82.50	255,447	215,509	—106,665	—122,999
N. Y., Susquehanna & Western	Nov.	135	312,574	54,197	405,945	37,396	86,478	3,325	187,618	10,504	325,320	80.10	80,625	59,741	47,133	—31,322
	11 mos.	135	3,257,599	651,487	4,393,092	683,090	921,527	40,572	2,211,169	118,756	3,974,931	90.50	418,161	107,623	—34,577	—27,367
E'ville, Indianapolis & Terre Haute	Nov.	143	162,263	4,007	172,715	39,522	34,943	1,702	63,399	3,032	142,598	82.60	30,117	28,725	12,049	21,459
	11 mos.	142	1,574,130	61,575	1,705,751	386,700	200,298	20,493	655,988	36,433	1,284,764	75.30	420,987	370,890	123,278	—14,376
Florida East Coast	Nov.	763	1,102,973	440,206	1,735,568	269,791	222,140	29,286	583,545	47,289	1,162,629	67.00	572,939	466,108	363,869	50,171
	11 mos.	763	10,640,014	5,144,710	17,850,126	2,614,011	2,796,301	184,530	5,640,846	394,673	11,737,685	65.80	6,112,441	4,995,008	4,007,880	2,892,055
Fort Smith & Western	Nov.	249	175,676	22,819	206,775	31,581	27,408	5,142	51,768	7,663	124,215	60.10	82,560	76,760	64,216	7,844
	11 mos.	249	1,401,821	218,944	1,719,748	312,492	303,013	57,188	546,545	84,301	1,301,703	75.70	418,045	352,663	192,458	67,418
Galveston Wharf Co.	Nov.	13	.....	.....	279,605	61,134	4,034	750	70,548	2,329	158,726	56.80	120,879	100,879	101,006	47,076
	11 mos.	13	.....	.....	1,541,322	502,099	42,527	9,610	384,059	29,146	1,071,656	69.50	469,666	268,381	268,448	209,874

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF NOVEMBER AND ELEVEN MONTHS OF CALENDAR YEAR 1924—CONTINUED

Name of road		Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of: Way and structures.	Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after rents.	Net after rents, 1923.
Georgia R. R.	Nov.	328	$393,126	$88,920	$516,748	$59,250	$105,362	$23,163	$215,086	$20,538	$421,155	81.50	$95,593	$88,677	$87,254	$89,500
	11 mos.	328	4,067,982	1,062,878	5,504,638	619,578	1,081,880	244,123	2,398,280	229,773	4,556,296	82.80	948,342	870,789	766,935	1,034,556
Georgia & Florida	Nov.	406	117,937	20,143	146,526	23,129	18,792	7,839	51,220	7,558	108,774	74.20	37,752	31,349	16,213	25,883
	11 mos.	406	1,326,895	210,990	1,631,689	206,292	222,625	93,278	602,483	89,452	1,216,671	74.60	415,018	343,432	193,059	213,256
Grand Trunk Western	Nov.	347	946,674	171,067	1,190,328	132,489	229,541	45,645	551,254	49,572	1,014,507	85.20	175,821	96,295	—34,284	—103,929
	11 mos.	347	13,451,627	2,121,890	16,551,969	1,979,912	4,178,747	503,520	6,532,984	548,987	13,832,641	83.60	2,719,328	1,880,222	138,647	1,675,715
Atlantic & Saint Lawrence	Nov.	166	175,157	26,127	214,161	47,695	24,472	6,229	98,278	8,023	186,402	87.00	27,759	9,593	—37,685	—64,799
	11 mos.	166	1,606,116	373,532	2,139,176	617,961	437,448	68,340	1,236,627	100,076	2,477,443	115.80	—338,267	—521,816	—1,165,952	—1,719,028
Chic., Det. & Can. Gr. Tr. Jct.	Nov.	59	181,709	3,186	232,121	22,235	34,621	5,946	77,973	3,086	143,838	62.00	88,283	74,316	45,283	46,931
	11 mos.	59	2,159,048	84,085	2,649,583	316,736	129,813	66,011	909,730	36,544	1,458,770	55.10	1,190,813	1,058,981	772,134	1,217,414
Detroit, Grand Haven & Milw.	Nov.	189	433,446	28,373	512,369	66,599	119,644	14,118	230,260	15,368	446,447	87.10	65,922	60,490	—39,973	—14,612
	11 mos.	189	5,023,684	413,677	5,957,973	1,023,579	534,552	156,235	2,677,149	168,941	4,563,266	76.60	1,394,707	1,333,984	344,550	478,521
Great Northern	Nov.	8,250	10,069,697	1,142,767	12,069,495	988,179	1,063,922	175,531	3,710,822	211,307	6,199,630	51.40	5,869,865	4,920,677	4,581,884	4,500,900
	11 mos.	8,251	79,446,609	12,442,046	101,474,883	13,167,046	15,691,394	1,914,891	35,597,334	2,378,998	69,121,024	68.10	32,353,859	23,042,077	22,493,854	23,070,406
Green Bay & Western	Nov.	234	115,562	7,494	130,890	31,569	18,553	3,633	43,129	2,490	99,240	75.80	31,650	24,150	17,550	15,549
	11 mos.	234	1,140,370	135,689	1,357,464	266,488	233,778	38,622	484,097	27,853	1,050,495	77.30	306,969	224,434	169,834	124,253
Gulf Coast Lines	Nov.	922	900,927	156,605	1,177,950	262,745	168,876	29,655	310,615	47,482	819,311	69.55	358,639	295,774	224,258	377,680
	11 mos.	922	10,303,058	1,929,843	13,114,834	2,208,012	1,702,955	327,645	3,246,056	469,051	7,924,629	60.42	5,190,205	4,532,471	3,888,288	3,290,435
Gulf & Ship Island	Nov.	307	226,101	32,859	292,157	71,567	39,144	7,869	57,525	15,701	202,072	69.20	90,085	64,116	49,605	30,892
	11 mos.	307	2,490,999	411,143	3,278,337	619,659	454,146	87,481	899,957	161,789	2,331,874	71.10	946,463	662,189	577,272	405,560
Gulf, Mobile & Northern	Nov.	465	508,971	35,082	564,466	80,583	104,475	27,154	171,512	23,254	406,590	72.03	1,578,876	126,999	107,927	41,040
	11 mos.	465	4,926,713	415,767	5,555,887	870,470	903,756	240,379	1,723,340	227,978	3,962,640	71.32	1,593,247	1,274,348	1,131,060	893,272
Hocking Valley	Nov.	348	1,319,028	66,124	1,538,768	151,205	508,842	14,303	501,552	36,402	1,212,088	78.80	326,680	185,521	195,860	—18,592
	11 mos.	348	13,974,020	821,957	16,231,117	1,745,755	5,016,878	153,300	4,910,346	400,875	12,225,199	75.30	4,005,918	2,891,692	3,257,963	2,445,705
Illinois Central	Nov.	4,847	9,621,059	1,889,066	12,380,187	1,805,535	2,925,207	227,062	4,625,645	311,364	9,827,643	79.40	2,552,544	1,461,029	1,541,009	1,656,157
	11 mos.	4,847	105,686,978	22,973,231	138,655,418	18,806,044	32,839,391	2,235,110	50,475,335	3,473,882	108,071,054	77.90	30,584,364	20,460,330	21,694,749	20,870,038
Yazoo & Mississippi Valley	Nov.	1,380	1,751,199	361,072	2,225,101	349,465	317,149	23,627	675,666	42,736	1,407,877	63.30	817,224	701,663	683,812	485,978
	11 mos.	1,380	15,547,985	3,383,776	20,014,639	3,275,115	3,452,555	264,412	7,234,140	477,392	14,705,428	73.50	5,309,211	4,038,709	3,853,998	1,552,135
Illinois Central Combined Report	Nov.	6,227	11,372,258	2,250,138	14,605,288	2,155,000	3,242,356	250,689	5,301,311	354,100	11,235,520	76.90	3,369,768	2,162,692	2,224,821	2,142,135
	11 mos.	6,227	121,234,963	26,357,007	158,670,057	22,081,159	36,291,946	2,499,522	57,709,475	3,951,274	122,776,482	77.40	35,893,575	24,499,039	25,548,747	22,422,173
International Great Northern	Nov.	1,159	1,276,963	224,140	1,645,531	253,971	262,769	37,625	544,948	51,808	1,145,685	69.58	500,446	452,135	338,164	269,040
	11 mos.	1,159	11,437,082	2,366,244	15,268,269	2,807,215	2,764,905	388,375	5,567,819	551,365	11,912,816	78.02	3,355,453	2,955,883	2,246,195	1,945,263
Kansas City, Mexico & Orient	Nov.	272	244,036	10,869	262,327	38,868	52,830	8,095	108,594	5,615	214,002	81.60	48,325	38,325	5,754	764
	11 mos.	272	1,962,838	96,748	2,139,788	407,481	469,437	65,216	861,167	63,116	1,866,372	87.20	273,416	184,378	—34,406	—57,062
Kans. C. Mex. & Orient of Tex.	Nov.	465	283,692	16,253	307,685	46,689	49,434	8,344	111,908	5,621	221,970	72.10	85,715	78,715	57,178	1,982
	11 mos.	465	2,074,949	137,587	2,291,089	512,303	397,760	69,966	844,748	66,277	1,889,787	82.50	401,302	339,347	161,030	—158,687
Kansas City Southern	Nov.	767	1,238,629	144,217	1,578,124	206,515	310,586	44,634	482,443	77,933	1,123,043	71.20	455,081	351,953	336,526	7,022
	11 mos.	767	13,382,653	1,731,166	16,733,378	2,440,471	3,262,345	466,013	5,526,694	837,421	12,525,360	74.90	4,208,018	3,184,250	2,876,602	2,727,022
Texarkana & Ft. Smith	Nov.	81	204,088	12,914	242,208	19,393	29,422	5,226	68,178	9,588	135,843	56.10	106,365	87,295	62,477	79,104
	11 mos.	81	2,272,977	152,211	2,644,975	237,638	253,160	56,961	705,341	106,583	1,384,916	52.40	1,260,059	1,082,614	805,700	815,406
Kansas, Oklahoma & Gulf	Nov.	314	198,603	9,597	214,253	48,783	26,629	8,308	70,594	9,304	163,376	76.30	50,877	40,652	27,162	27,991
	11 mos.	314	1,813,138	106,640	1,985,497	482,512	317,211	90,680	750,342	117,177	1,758,164	88.50	227,333	115,291	30,908	156,405
Lake Superior & Ishpeming	Nov.	162	101,966	2,880	119,375	25,538	23,446	404	40,823	4,945	95,107	79.70	24,268	12,920	11,918	65,564
	11 mos.	162	1,502,071	46,599	1,743,726	414,961	260,688	5,787	508,763	57,805	1,247,689	71.60	496,037	354,894	332,251	643,166
Lake Terminal R. R.	Nov.	13	.....	.....	78,181	11,082	19,916	.....	49,597	1,773	82,368	105.40	—4,187	—10,596	—11,953	—11,878
	11 mos.	13	.....	.....	981,324	188,302	198,576	.....	616,749	19,907	1,023,534	104.30	—42,210	—112,710	—107,417	2,060
Lehigh & Hudson River	Nov.	96	226,450	2,758	239,345	40,075	39,464	1,626	89,230	9,037	179,432	75.00	59,913	45,801	21,897	28,848
	11 mos.	96	2,748,211	35,387	2,895,558	382,771	476,749	18,487	1,060,167	111,481	2,049,534	70.80	846,024	691,082	424,894	591,580
Lehigh & New England	Nov.	219	468,257	1,506	480,895	64,787	93,309	5,658	143,776	18,674	324,830	67.50	156,065	134,597	135,269	47,281
	11 mos.	219	4,893,702	17,565	5,004,743	661,133	1,212,930	66,270	1,549,328	207,034	3,692,964	73.80	1,311,779	1,106,850	1,168,104	1,178,306
Lehigh Valley	Nov.	1,374	5,247,938	550,532	6,190,695	801,653	1,606,710	119,907	2,586,393	130,652	5,273,574	85.20	917,121	706,841	634,520	1,097,512
	11 mos.	1,374	58,326,034	7,058,873	70,087,240	7,792,320	17,158,725	1,285,129	27,987,540	1,484,787	56,010,906	79.90	14,076,334	11,164,055	10,511,653	5,259,213
Los Angeles & Salt Lake	Nov.	1,209	1,314,474	326,612	1,865,780	388,516	378,902	72,218	679,557	63,920	1,644,447	88.10	221,333	80,695	—7,898	422,981
	11 mos.	1,209	15,222,217	5,128,875	22,454,683	4,495,022	4,480,588	668,375	7,298,059	685,284	18,373,129	81.80	4,081,554	2,646,357	1,742,528	3,307,193
Louisiana & Arkansas	Nov.	302	311,099	27,763	350,394	79,065	64,654	8,777	96,746	20,051	268,619	76.70	81,775	40,128	25,994	84,214
	11 mos.	302	3,233,178	358,653	3,697,195	684,251	757,896	98,025	1,031,775	146,189	2,712,511	73.40	984,684	702,203	561,349	774,361
Louisiana Ry. & Nav. Co.	Nov.	337	340,297	22,895	380,923	110,810	71,725	11,956	144,059	9,780	347,699	91.20	33,224	11,212	—41,426	33,268
	11 mos.	337	3,347,529	258,230	3,794,478	998,441	643,768	116,895	1,514,269	115,815	3,381,216	89.10	413,262	210,512	—183,939	146,052
Louisiana Ry. & Nav. Co. of Tex.	Nov.	206	96,150	12,083	115,050	18,592	16,058	2,672	48,665	5,847	91,834	79.80	23,216	19,214	4,908	23,772
	11 mos.	206	988,469	142,418	1,209,477	228,614	160,929	35,468	548,270	55,058	1,028,308	85.00	181,169	137,145	—46,929	42,445
Louisville & Nashville	Nov.	5,042	9,082,184	1,760,400	11,531,492	1,656,100	2,659,291	244,163	4,211,695	235,737	8,998,124	78.00	2,533,368	1,932,991	1,835,204	1,279,254
	11 mos.	5,042	93,806,638	21,788,778	123,310,622	18,139,377	29,155,193	2,494,011	45,288,360	2,805,469	98,121,836	79.60	25,188,786	19,542,594	19,722,707	19,341,774
Louisville, Henderson & St. Louis	Nov.	199	200,978	53,911	270,780	46,583	40,634	7,390	93,940	9,314	197,861	73.10	72,919	55,207	48,840	52,024
	11 mos.	199	2,274,895	660,799	3,138,297	665,755	489,119	78,322	1,102,250	102,876	2,438,322	77.70	699,975	547,210	447,783	653,485
Maine Central	Nov.	1,207	1,265,295	250,212	1,657,684	251,645	347,747	13,811	694,120	31,913	1,339,161	80.80	318,523	220,739	212,673	234,165
	11 mos.	1,207	13,106,759	3,934,983	18,655,850	3,016,311	3,687,518	154,483	7,858,195	528,566	15,262,415	81.80	3,393,435	2,274,049	2,204,243	1,758,161
Midland Valley	Nov.	364	318,042	46,851	381,700	42,501	50,420	6,276	129,606	16,722	241,794	63.30	139,906	118,406	98,551	71,912
	11 mos.	364	3,404,214	571,911	4,138,668	730,170	552,450	66,874	1,183,800	187,367	2,689,491	65.00	1,449,177	1,247,077	1,084,563	1,013,900

REVENUES AND EXPENSES OF RAILWAYS

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF NOVEMBER AND ELEVEN MONTHS OF CALENDAR YEAR 1924—CONTINUED

Name of road		Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after rents.	Net after rents, 1923.
Minneapolis & St. Louis	Nov.	1,637	$1,121,405	$96,131	$1,285,051	$135,996	$337,232	$80,018	$550,980	$43,548	$1,098,065	85.40	$186,986	$118,660	$48,671	—58,945
	11 mos.	1,647	11,811,759	1,283,215	13,869,297	2,895,558	3,590,632	309,355	6,189,834	491,862	13,475,937	97.20	393,360	—290,036	—996,519	730,440
Minneapolis, St. P. & S. S. Marie	Nov.	4,402	4,460,650	467,898	5,226,127	481,852	686,348	61,069	1,678,366	98,680	3,016,356	57.70	2,209,771	1,860,213	1,671,655	926,575
	11 mos.	4,402	34,296,203	6,046,548	44,038,298	6,373,162	7,893,438	717,612	17,228,869	1,210,524	33,632,691	76.40	10,405,607	7,577,777	6,530,442	7,501,551
Mississippi Central	Nov.	257	136,528	13,895	154,931	31,098	23,849	6,860	44,371	9,978	116,156	74.90	38,775	28,772	28,053	40,128
	11 mos.	257	1,483,646	169,671	1,704,681	312,557	275,708	68,890	470,896	97,828	1,225,003	71.90	479,678	399,440	445,422	274,283
Missouri & North Arkansas	Nov.	364	114,878	18,345	141,751	27,010	19,415	4,576	52,108	6,867	109,976	77.60	31,775	30,684	17,475	28,333
	11 mos.	364	1,125,619	218,457	1,446,136	319,773	240,862	49,917	573,412	80,283	1,264,193	87.40	181,943	156,067	60,950	122,669
Missouri-Kansas-Texas	Nov.	1,799	2,537,522	436,372	3,214,305	390,241	765,802	62,716	803,554	87,942	2,121,123	66.00	1,093,182	838,048	871,236	733,041
	11 mos.	1,804	24,090,276	4,904,609	31,369,528	4,018,171	7,180,206	582,237	8,422,442	1,008,411	21,337,913	68.00	10,031,615	7,657,231	8,009,725	7,075,104
Mo.-Kansas-Texas of Texas	Nov.	1,389	1,880,929	435,121	2,477,360	364,996	368,888	49,043	808,154	68,172	1,664,906	67.20	812,454	749,571	523,256	173,154
	11 mos.	1,389	14,134,347	4,595,771	20,395,407	2,861,678	3,354,047	461,278	7,223,965	743,443	14,728,654	72.20	5,666,753	5,110,855	3,218,361	955,974
Missouri Pacific	Nov.	7,360	9,077,714	1,331,067	11,239,977	1,657,015	2,114,798	226,023	4,103,167	312,591	8,483,152	75.50	2,756,825	2,263,187	1,784,254	1,301,362
	11 mos.	7,362	87,098,905	16,058,093	112,441,962	17,418,451	23,522,257	2,345,648	42,290,134	3,396,420	89,600,502	79.70	22,841,460	18,536,552	14,378,035	8,026,847
Mobile & Ohio	Nov.	1,161	1,372,094	139,839	1,609,112	247,436	314,620	51,444	546,009	47,565	1,207,855	75.10	401,257	295,661	231,146	150,392
	11 mos.	1,164	15,235,354	1,681,539	17,931,372	2,566,373	3,259,489	520,065	6,189,419	530,650	13,066,759	72.90	4,864,613	3,875,380	3,325,259	2,527,775
Monongahela	Nov.	106	399,070	24,942	428,434	55,000	36,000	1,024	116,019	8,823	215,604	50.30	212,830	195,324	140,364	—11,065
	11 mos.	106	3,923,782	303,292	4,277,343	605,000	719,758	11,523	1,232,997	106,071	2,674,597	62.50	1,602,746	1,472,354	844,172	652,045
Monongahela Connecting	Nov.	7	.....	.....	143,464	25,141	36,266	375	74,182	7,018	142,982	99.70	482	—4,434	—4,628	—4,324
	11 mos.	7	.....	.....	1,763,234	253,967	415,623	4,152	921,841	62,068	1,657,651	94.00	105,583	50,567	—11,130	204,724
Montour	Nov.	57	120,199	709	122,072	23,198	42,474	951	31,697	7,417	105,737	86.60	16,335	8,591	48,462	53,843
	11 mos.	57	1,513,029	9,749	1,540,535	319,393	522,293	11,186	377,785	80,655	1,311,312	85.10	229,223	144,864	519,743	882,526
Nashville, Chatt. & St. Louis	Nov.	1,259	1,434,014	360,569	1,940,845	307,616	420,500	88,918	710,417	68,029	1,602,356	82.60	338,489	288,386	283,348	181,924
	11 mos.	1,258	15,658,363	4,404,637	21,634,603	3,342,558	4,927,120	829,352	8,087,220	746,321	17,968,710	83.10	3,665,893	3,042,465	3,033,732	2,903,215
Nevada Northern	Nov.	165	75,881	10,004	91,551	17,899	9,774	946	17,973	4,151	50,743	55.40	40,808	3,414	2,086	51,352
	11 mos.	165	827,577	107,659	997,616	168,531	87,073	10,039	179,282	50,233	495,158	49.60	502,458	401,081	396,813	454,010
Newburgh & South Shore	Nov.	7	.....	.....	164,001	25,902	32,397	.....	63,803	3,909	126,011	76.80	37,990	24,879	22,126	24,404
	11 mos.	7	.....	.....	1,828,365	308,408	501,821	.....	731,947	44,003	1,590,849	87.00	237,516	89,593	134,386	135,083
New Orleans Great Northern	Nov.	274	202,871	26,470	237,690	30,643	37,747	5,573	73,837	10,507	158,325	66.60	79,365	55,744	43,600	39,262
	11 mos.	274	2,266,834	337,266	2,702,891	407,946	447,486	59,837	840,043	121,619	1,680,930	69.60	821,961	605,502	484,046	638,852
New York Central	Nov.	6,889	18,738,004	6,921,036	29,511,385	3,918,326	6,718,751	348,543	10,816,763	868,049	23,047,626	78.10	6,463,759	4,637,623	4,938,807	3,700,808
	11 mos.	6,889	208,109,454	87,821,815	338,221,539	42,522,410	72,010,011	3,922,122	123,124,767	9,828,146	255,538,010	75.60	82,683,529	60,995,648	59,417,113	68,044,225
Cincinnati Northern	Nov.	244	391,547	8,443	406,177	50,025	71,904	5,454	143,092	8,761	279,222	68.70	126,955	96,595	81,092	43,360
	11 mos.	244	4,192,221	124,188	4,404,920	586,379	738,182	61,692	1,468,582	92,804	2,945,040	66.90	1,459,880	1,212,332	814,959	738,423
Cleve., Cin., Chic. & St. L.	Nov.	2,417	5,362,897	1,203,273	7,168,151	880,610	1,617,075	114,302	2,700,026	181,644	5,549,749	77.40	1,618,402	1,209,351	1,062,856	1,078,376
	11 mos.	2,411	58,585,998	15,124,342	80,233,257	10,028,635	17,736,729	1,298,090	29,741,603	2,137,705	61,402,995	76.50	18,830,262	14,408,688	12,803,474	16,197,957
Indiana Harbor Belt	Nov.	119	.....	.....	859,534	109,100	82,050	4,578	431,316	21,655	648,179	75.40	211,355	188,347	48,632	71,568
	11 mos.	119	.....	.....	9,951,236	1,332,436	1,438,297	50,825	4,450,609	249,386	7,509,154	75.50	2,442,082	2,146,250	806,046	1,423,512
Michigan Central	Nov.	1,862	4,539,003	1,469,150	6,673,001	1,061,386	1,252,005	106,558	2,421,460	150,842	5,064,290	75.90	1,608,711	1,173,628	1,155,800	537,423
	11 mos.	1,862	53,812,361	18,847,374	80,473,411	10,177,071	15,020,529	1,135,995	28,024,808	1,716,416	56,895,851	70.70	23,577,560	18,472,563	17,599,041	18,725,936
Pittsburgh & Lake Erie	Nov.	231	2,174,778	240,819	2,496,405	424,487	750,858	19,280	802,123	72,052	2,069,363	82.90	427,042	262,030	703,108	966,491
	11 mos.	232	24,800,777	2,829,559	28,707,263	4,154,341	8,851,463	259,396	9,311,356	782,890	23,369,177	81.40	5,338,086	3,583,224	7,422,647	15,100,667
New York, Chicago & St. Louis	Nov.	1,695	4,260,180	136,804	4,544,825	533,961	857,887	113,878	1,580,672	151,587	3,242,410	71.30	1,302,415	1,128,261	1,101,305	129,748
	11 mos.	1,695	45,862,911	1,915,047	49,561,409	6,780,158	9,267,803	1,299,638	18,121,809	1,695,379	37,212,377	75.10	12,349,032	9,871,245	8,627,291	8,727,607
N. Y., New Haven & Hartford	Nov.	1,979	5,343,903	3,987,958	10,474,105	1,060,108	2,179,421	68,165	3,854,666	271,284	7,595,293	72.50	2,878,812	2,475,616	2,075,089	1,294,747
	11 mos.	1,988	58,169,642	45,504,419	116,371,955	14,860,885	25,141,818	740,140	43,753,878	3,106,580	89,304,931	76.70	27,067,024	22,592,590	17,871,481	11,436,626
Central New England	Nov.	292	660,189	11,611	693,976	103,117	107,022	5,084	196,938	12,549	424,710	61.20	269,266	243,541	224,120	157,795
	11 mos.	294	7,057,790	142,061	7,437,548	1,359,779	1,376,362	56,095	2,383,110	132,596	5,307,942	71.40	2,129,606	1,846,607	1,525,872	1,011,725
New York Connecting	Nov.	20	211,504	.....	260,454	17,563	13,142	.....	43,720	1,141	75,566	29.00	184,888	142,388	109,898	94,495
	11 mos.	20	2,172,559	.....	2,759,135	157,691	154,906	.....	508,893	14,186	835,676	30.30	1,923,459	1,490,609	1,098,563	1,417,014
New York, Ontario & Western	Nov.	569	733,056	79,948	963,166	133,419	192,017	14,983	445,918	33,013	820,642	85.20	142,524	130,573	93,160	105,223
	11 mos.	569	8,181,146	2,667,239	12,674,249	1,853,813	2,264,584	169,918	5,443,620	387,153	10,135,273	79.90	2,538,976	2,076,265	1,612,042	908,842
Norfolk & Western	Nov.	2,240	7,765,629	661,236	8,784,698	1,111,202	1,776,525	82,316	2,385,934	160,464	5,515,982	62.80	3,268,716	2,692,711	2,954,427	1,712,599
	11 mos.	2,240	74,296,912	8,192,758	86,058,945	13,297,909	20,327,968	966,430	26,726,458	1,844,057	63,212,694	73.50	22,846,251	16,009,124	17,836,917	17,499,708
Norfolk Southern	Nov.	931	613,904	83,307	741,606	85,836	118,745	22,448	292,742	27,271	546,540	73.70	195,066	150,380	120,757	140,357
	11 mos.	931	6,904,542	1,149,878	8,548,021	1,142,754	1,278,990	263,568	3,382,775	318,983	6,392,788	74.80	2,155,233	1,677,611	1,280,319	1,215,732
Northern Pacific	Nov.	6,700	7,938,420	918,140	9,547,005	709,331	1,463,776	138,531	3,007,837	211,807	5,610,359	58.80	3,936,646	3,013,634	3,159,797	3,012,652
	11 mos.	6,678	67,032,636	12,049,238	87,046,414	11,624,560	17,226,657	1,758,922	31,094,897	2,486,799	64,866,536	74.50	22,179,878	14,224,022	17,485,363	15,049,268
Northwestern Pacific	Nov.	480	267,046	156,596	474,346	72,767	78,478	4,629	219,763	16,969	391,180	82.50	83,166	37,053	27,141	998
	11 mos.	489	3,806,839	2,182,183	6,643,824	1,083,943	979,920	69,831	2,481,827	195,422	4,796,720	72.20	1,847,104	1,343,189	1,238,542	1,424,813

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF NOVEMBER AND ELEVEN MONTHS OF CALENDAR YEAR 1924—CONTINUED

Name of road		Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after rents.	Net after rents, 1923.
Pennsylvania R. R.	Nov.	10,499	$36,185,280	$11,156,962	$52,070,884	$7,598,132	$13,006,066	$676,221	$20,561,309	$1,464,968	$44,048,762	84.60	$8,022,122	$5,432,656	$4,014,810	$6,385,924
	11 mos.	10,499	405,216,275	135,292,876	592,523,939	67,746,352	144,860,942	7,154,830	229,400,239	15,721,887	473,346,260	79.90	119,177,679	89,017,752	71,725,140	74,861,048
Baltimore, Chesapeake & Atlantic	Nov.	125	76,474	28,522	110,849	18,121	24,967	1,494	76,320	3,203	124,105	112.00	—13,256	—13,256	—14,811	—2,406
	11 mos.	111	942,456	409,372	1,410,676	146,798	272,958	21,709	867,193	39,305	1,347,963	95.60	62,713	14,709	10,730	—115,503
Long Island	Nov.	397	819,571	1,573,269	2,603,835	333,867	458,823	27,240	1,196,404	71,367	2,095,075	80.50	508,760	404,593	292,297	147,392
	11 mos.	397	9,413,838	20,540,766	32,457,323	3,984,210	5,280,073	245,419	13,896,360	729,687	24,259,125	74.70	8,198,198	6,517,225	4,351,604	3,734,087
West Jersey & Seashore	Nov.	360	375,723	402,668	826,730	183,297	162,916	4,020	443,389	25,609	819,726	99.20	7,004	6,925	—20,083	—30,994
	11 mos.	360	4,056,806	7,283,775	12,123,981	1,861,073	2,172,757	184,307	5,466,410	303,520	10,020,535	82.70	2,103,446	1,190,878	872,183	1,022,521
Peoria & Pekin Union	Nov.	19	25,478	3,553	160,196	57,411	21,127	939	70,154	7,990	157,621	98.40	2,575	—13,425	11,148	68,805
	11 mos.	19	287,577	30,739	1,647,048	335,737	177,098	8,306	738,845	86,612	1,346,598	81.80	300,450	154,450	412,111	504,190
Pere Marquette	Nov.	2,269	2,967,444	288,892	3,499,484	435,017	714,081	50,696	1,257,994	100,271	2,558,159	73.10	941,325	704,556	588,589	777,825
	11 mos.	2,290	30,830,712	4,488,370	38,450,565	4,767,557	7,873,763	577,510	14,098,274	1,143,246	28,387,778	73.80	10,062,787	8,154,189	6,698,001	6,610,009
Pittsburgh & Shawmut	Nov.	102	103,595	2,993	109,069	14,979	31,723	1,474	33,365	6,294	87,835	80.50	21,234	9,257	23,644	—4,150
	11 mos.	102	957,862	49,116	1,036,261	190,019	371,757	16,136	331,858	76,253	986,025	95.20	50,236	14,341	163,762	240,836
Pittsburgh & West Virginia	Nov.	92	351,968	7,985	396,120	32,494	84,331	5,194	75,123	22,327	234,559	59.20	161,561	116,684	175,655	126,153
	11 mos.	92	3,351,190	91,091	3,822,992	426,377	1,000,414	51,887	805,661	193,718	2,632,442	68.90	1,190,550	731,250	1,483,325	1,215,025
Pittsburgh, Shawmut & Northern	Nov.	210	144,028	3,137	150,048	18,111	33,686	2,015	53,122	5,688	112,622	75.00	37,426	34,772	33,064	—1,791
	11 mos.	210	1,261,836	50,950	1,360,021	268,445	356,343	18,375	546,417	61,787	1,251,367	92.10	108,654	79,117	27,986	—23,289
Quincy, Omaha & Kansas City	Nov.	250	55,298	16,015	78,685	29,057	15,428	588	41,496	2,439	88,886	113.00	—10,201	—18,862	—22,642	10,494
	11 mos.	250	643,775	225,224	963,980	344,330	170,485	10,122	480,123	31,163	1,034,318	107.30	—70,338	—119,817	—156,273	—186,805
Reading Company	Nov.	1,148	6,551,782	799,023	7,667,548	931,226	1,674,982	52,501	2,791,120	164,326	5,623,787	73.30	2,043,761	1,717,481	1,805,070	1,024,738
	11 mos.	1,148	70,968,039	9,323,683	84,048,142	10,128,756	19,885,278	776,070	31,003,219	2,072,425	63,945,322	76.10	20,102,820	16,294,785	17,704,825	26,672,204
Atlantic City	Nov.	169	142,311	134,790	293,152	89,266	25,892	6,358	178,751	4,478	304,789	104.00	—11,637	—47,586	—71,557	—100,384
	11 mos.	169	1,368,846	2,893,099	4,474,475	1,163,195	345,062	92,108	2,264,486	53,585	3,919,497	87.60	554,978	319,190	14,121	116,953
Perkiomen	Nov.	41	103,472	4,429	111,856	7,979	5,699	108	44,355	758	58,941	52.70	52,915	48,720	43,341	45,899
	11 mos.	41	1,002,798	68,079	1,111,327	104,901	63,441	1,190	475,012	8,716	653,678	58.80	457,649	407,582	346,113	301,657
Port Reading	Nov.	21	140,566	.....	188,795	22,534	4,530	229	63,725	1,356	92,370	48.90	96,425	74,025	17,806	—2,544
	11 mos.	21	1,525,504	.....	1,933,239	250,429	103,133	2,519	759,712	29,580	1,145,327	59.20	787,912	636,237	100,440	292,905
Richm'd, Fredericksburg & Potomac	Nov.	117	469,237	301,501	941,183	127,553	146,670	7,826	304,819	31,401	636,639	67.60	304,544	251,550	194,418	181,579
	11 mos.	117	5,311,615	3,675,921	10,785,919	1,282,529	1,622,451	100,719	3,568,072	364,804	7,189,483	66.70	3,596,436	2,986,059	2,401,348	2,588,969
Rutland	Nov.	413	292,269	84,756	497,690	100,871	91,513	8,857	221,208	11,930	435,991	87.60	61,699	38,196	43,400	96,995
	11 mos.	413	3,378,575	1,298,310	6,002,528	1,148,278	1,107,465	97,634	2,462,593	145,375	4,979,818	83.00	1,022,710	719,790	760,552	870,099
St. Louis-San Francisco	Nov.	4,747	5,936,076	1,390,326	7,806,688	1,076,412	1,496,581	101,664	2,541,942	202,844	5,395,697	69.10	2,411,591	1,974,788	1,903,176	1,562,562
	11 mos.	4,747	56,528,058	16,413,948	78,325,883	9,956,301	15,825,715	1,067,083	26,330,489	2,191,945	55,150,807	70.40	23,175,076	18,970,394	18,773,911	16,794,861
Ft. Worth & Rio Grande	Nov.	235	96,945	24,290	139,902	32,594	25,461	3,111	63,750	4,558	129,434	92.50	10,468	6,634	—4,978	17,647
	11 mos.	235	994,784	276,683	1,406,368	243,925	265,971	41,275	632,989	64,077	1,247,822	88.70	158,546	115,685	11,450	—64,775
St. Louis, San Francisco & Tex.	Nov.	134	216,373	13,534	235,707	31,342	32,884	5,147	69,129	7,326	145,819	61.90	89,888	87,801	56,479	32,257
	11 mos.	134	1,577,657	154,273	1,810,193	274,236	296,680	52,664	637,989	73,856	1,335,069	73.80	475,124	451,208	193,490	7,559
St. Louis Southwestern	Nov.	969	1,497,224	155,285	1,741,255	195,964	320,614	53,382	394,675	61,093	1,042,844	59.90	698,411	587,210	494,180	580,246
	11 mos.	969	13,936,483	1,621,963	16,436,074	2,199,952	3,461,222	533,386	4,171,853	661,397	11,178,432	68.00	5,257,642	4,426,227	3,685,259	5,678,918
St. Louis Southwestern of Texas	Nov.	807	604,876	87,538	751,455	170,107	152,673	22,286	270,427	32,393	650,107	86.50	101,348	75,802	109,503	131,759
	11 mos.	807	5,683,188	1,012,323	7,288,674	1,681,691	1,877,792	242,531	2,855,579	341,073	7,039,632	96.60	249,042	—34,598	408,432	—437,287
San Antonio & Aransas Pass	Nov.	739	562,106	64,352	669,052	170,302	131,570	10,703	247,991	22,230	580,468	86.80	88,584	72,665	50,081	164,434
	11 mos.	739	5,614,813	809,079	6,837,746	1,449,650	1,444,398	125,335	2,456,697	243,459	5,696,314	83.30	1,141,432	960,135	777,899	759,786
San Antonio, Uvalde & Gulf	Nov.	317	75,431	16,214	105,895	21,938	12,462	4,723	47,389	5,962	92,414	87.30	13,481	9,181	946	9,826
	11 mos.	317	1,073,376	215,783	1,412,284	250,628	156,234	49,748	581,545	66,757	1,104,570	78.20	307,714	265,594	137,129	107,767
Seaboard Air Line	Nov.	3,570	3,530,752	800,562	4,756,303	845,424	855,097	124,881	1,672,945	149,654	3,684,482	77.50	1,071,821	836,520	747,720	800,857
	11 mos.	3,571	34,649,850	8,714,634	48,080,499	7,043,327	8,448,116	1,530,011	18,156,911	1,838,501	37,457,259	77.90	10,623,266	8,475,977	8,032,571	7,018,976
Southern Ry.	Nov.	6,868	8,825,523	2,253,695	12,076,287	1,593,171	2,043,823	229,583	3,932,579	309,891	8,185,768	67.80	3,890,519	3,128,851	3,046,735	2,562,785
	11 mos.	6,868	91,205,406	28,194,767	129,855,890	18,140,569	23,452,462	2,462,152	45,902,131	3,531,057	94,359,019	72.70	35,496,871	28,459,309	27,037,970	25,213,267
Alabama Great Southern	Nov.	318	639,561	162,217	858,158	135,115	167,415	21,144	264,010	27,103	621,844	72.50	236,314	172,995	178,668	145,847
	11 mos.	318	6,761,659	1,879,024	9,210,440	1,395,498	1,960,069	226,747	2,898,877	280,045	6,836,349	74.20	2,374,091	1,875,568	2,151,492	2,286,447
Cin., New Orleans & Tex. Pacific	Nov.	338	1,417,233	320,501	1,833,980	237,744	371,537	41,478	517,867	51,933	1,230,724	67.10	603,256	504,029	512,810	431,718
	11 mos.	338	15,339,924	3,704,831	20,115,936	2,966,812	4,113,265	437,252	5,894,255	527,523	14,066,924	69.90	6,049,612	5,168,537	5,076,616	4,454,746
Georgia Southern & Florida	Nov.	401	291,648	138,819	466,713	53,884	56,170	8,828	160,305	10,336	293,671	62.90	173,042	154,362	113,971	91,605
	11 mos.	401	3,026,806	1,266,505	4,642,332	758,033	624,351	104,555	1,685,149	117,672	3,321,997	71.60	1,320,335	1,116,055	671,618	538,435
New Orleans & Northeastern	Nov.	207	344,402	80,005	460,081	57,905	89,282	10,468	141,638	15,803	319,164	69.40	140,917	94,209	68,240	36,369
	11 mos.	207	3,881,117	917,992	5,185,573	725,238	962,830	124,885	1,563,194	175,406	3,595,159	69.30	1,590,414	1,162,054	1,071,323	803,658
Northern Alabama	Nov.	110	105,036	11,769	119,640	21,105	5,635	2,278	37,850	2,797	69,665	58.20	40,975	47,029	18,387	16,602
	11 mos.	110	1,176,405	137,462	1,349,097	227,174	64,351	25,751	444,937	34,480	796,759	59.10	552,338	495,390	182,849	292,477

REVENUES AND EXPENSES OF RAILWAYS

New Orleans & Northeastern	11 mos.	207	3,881,117	917,992	5,185,573	725,238	962,830	124,885	1,563,194	175,406	3,595,159	69.30	1,590,414	1,162,054	1,071,323	803,658
Northern Alabama	Nov.	110	105,036	11,769	119,640	21,105	5,635	2,278	37,850	2,797	69,665	58.20	49,975	47,929	18,387	16,602
	11 mos.	110	1,176,405	137,462	1,349,097	227,174	64,351	25,751	444,937	34,480	796,759	59.10	552,338	495,390	182,849	292,477

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF NOVEMBER AND ELEVEN MONTHS OF CALENDAR YEAR 1924—CONTINUED

Name of road		Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after rents.	Net after rents, 1923.
Southern Pacific	Nov.	8,641	$11,370,641	$3,200,476	$16,165,314	$2,337,820	$2,570,206	$319,619	$5,815,904	$529,019	$11,759,523	72.70	$4,405,791	$2,924,413	$2,876,302	$4,430,924
	11 mos.	7,305	119,913,236	38,644,446	176,415,071	26,838,642	28,535,462	3,188,719	60,116,344	5,556,940	123,703,038	70.10	52,712,033	37,758,166	35,523,320	43,291,443
*Arizona Eastern	Nov. 1 to 7	382	67,105	5,066	75,685	10,820	11,710	744	29,490	4,838	57,871	76.50	17,814	11,117	9,771	18,477
	10 mos. and 7 days	382	2,578,252	246,417	2,976,919	474,565	442,490	64,396	932,071	212,655	2,107,745	70.80	869,174	575,831	523,010	824,582
Atlantic Steamship Lines	Nov.	...	915,822	38,082	1,107,431	18,427	149,942	23,406	784,983	33,641	1,010,399	91.20	97,032	72,446	72,315	—64,432
	11 mos.	...	9,441,729	570,555	11,043,384	212,558	2,130,189	218,747	7,681,862	344,232	10,587,588	95.90	455,796	294,436	292,091	1,769,823
Galveston, Harrisb'g & S. Antonio	Nov.	1,379	1,768,791	374,095	2,280,836	257,839	337,484	65,368	769,991	82,616	1,529,195	67.00	751,641	678,409	576,554	344,639
	11 mos.	1,379	18,355,881	4,526,140	24,288,203	3,840,473	4,398,589	505,357	8,174,506	963,144	18,012,524	74.20	6,275,679	5,511,376	4,767,731	2,110,773
Houston & Texas Central	Nov.	929	1,121,179	253,028	1,462,227	207,001	207,004	30,875	419,134	46,047	912,028	62.40	550,199	425,869	333,354	377,622
	11 mos.	924	10,093,691	2,826,810	13,804,628	2,821,994	2,489,618	290,929	4,515,340	471,758	10,579,244	76.60	3,225,384	2,551,288	1,933,707	1,767,345
Houston, East & West Texas	Nov.	191	203,097	38,930	256,818	59,184	50,831	3,842	66,494	9,347	189,520	73.80	67,298	55,547	41,015	15,573
	11 mos.	191	2,304,413	475,047	2,933,524	780,713	624,039	41,593	1,020,542	91,640	2,550,025	86.90	383,499	297,941	156,037	150,429
Louisiana Western	Nov.	207	270,879	74,874	376,827	36,434	54,973	13,077	98,912	18,892	226,636	60.10	150,191	102,206	93,154	109,554
	11 mos.	207	2,618,781	918,954	3,835,787	496,763	748,162	131,291	1,114,394	201,165	2,733,687	71.30	1,102,100	754,690	768,420	834,656
Morgan's L. & T. R. R. & S. S. Co.	Nov.	400	620,662	119,512	798,152	100,217	170,569	20,819	291,684	36,921	624,126	78.20	174,026	114,816	59,532	151,775
	11 mos.	400	5,507,078	1,506,714	7,614,908	1,461,252	1,782,222	210,223	3,077,777	394,259	6,937,401	91.10	677,507	127,453	—165,544	147,027
Texas & New Orleans	Nov.	507	550,070	145,786	760,216	115,284	205,520	18,927	313,035	30,875	683,994	90.00	76,222	43,956	3,639	—146,033
	11 mos.	507	6,127,915	1,736,057	8,436,589	1,928,995	2,040,163	145,274	3,153,612	311,376	7,432,567	88.10	1,004,022	670,395	242,977	—187,729
Spokane International	Nov.	165	61,095	15,435	81,243	14,256	3,575	3,336	31,328	5,725	58,950	72.60	22,293	18,681	11,858	13,318
	11 mos.	165	785,255	170,676	1,016,717	199,722	95,708	36,566	358,691	68,111	768,300	75.60	248,417	189,214	110,975	124,491
Spokane, Portland & Seattle	Nov.	554	614,885	102,471	802,361	92,484	103,731	8,768	200,892	20,043	433,248	53.90	369,113	303,589	292,618	260,825
	11 mos.	554	5,716,223	1,388,939	7,863,187	980,126	1,183,739	105,141	2,295,850	234,505	4,886,902	62.10	2,976,285	2,203,935	2,054,409	1,545,929
Tennessee Central	Nov.	296	212,182	34,307	263,269	42,718	52,059	7,087	91,783	10,308	203,890	77.40	59,379	52,822	32,096	26,783
	11 mos.	296	2,038,261	457,307	2,665,860	440,519	404,589	73,179	978,014	110,621	2,006,320	75.30	659,540	586,341	406,729	334,733
Term. Railroad Assoc. of St. Louis	Nov.	37	.....	.....	442,312	65,194	38,320	933	154,241	8,716	273,232	61.80	169,080	106,612	204,054	174,047
	11 mos.	37	.....	.....	4,672,924	983,302	497,758	10,712	1,673,909	98,415	3,303,619	70.70	1,369,305	720,230	1,742,882	2,024,056
East St. Louis Connecting	Nov.	1	.....	.....	182,940	20,857	7,857	267	67,691	2,332	99,004	54.10	83,936	70,738	47,327	55,626
	11 mos.	1	.....	.....	2,026,133	205,891	141,887	3,064	753,189	27,186	1,131,217	55.80	894,916	818,357	581,836	843,419
St. L. Merchants' Bridge Term	Nov.	9	.....	.....	389,056	72,808	21,250	861	172,928	6,657	274,504	70.60	114,552	86,786	90,362	37,631
	11 mos.	9	.....	.....	4,195,819	855,781	324,057	9,887	2,009,325	77,989	3,277,039	78.10	918,780	661,707	698,869	989,868
St. Louis Transfer Ry	Nov.	6	.....	.....	60,383	11,230	3,441	155	31,537	1,216	47,579	78.80	12,804	12,074	7,327	8,473
	11 mos.	6	.....	.....	716,774	113,824	69,702	1,781	406,104	13,664	604,445	84.30	112,329	109,153	46,014	174,788
Texas & Pacific Ry	Nov.	1,952	2,398,372	620,627	3,257,785	416,269	458,424	55,781	1,052,266	87,861	2,054,935	63.10	1,202,850	1,022,444	890,907	865,892
	11 mos.	1,952	21,621,834	6,430,831	30,472,319	4,380,396	5,943,636	639,792	10,400,156	1,675,974	22,999,648	75.50	7,472,671	5,775,989	5,007,457	4,423,990
Toledo, Peoria & Western	Nov.	247	100,975	25,768	138,756	32,710	33,105	2,315	71,669	6,843	146,642	105.70	—7,886	—2,886	—10,612	—39,156
	11 mos.	247	1,231,069	388,239	1,767,287	290,577	394,070	24,697	809,997	77,575	1,596,205	90.30	171,082	63,773	—50,846	—262,546
Trinity & Brazos Valley	Nov.	368	329,705	15,673	354,277	37,972	39,363	3,641	112,873	12,138	205,954	58.10	148,323	141,207	109,058	146,899
	11 mos.	368	1,812,431	208,093	2,104,211	526,855	521,619	38,487	884,195	129,146	2,094,692	99.50	9,519	—71,472	—284,090	488,756
Ulster & Delaware	Nov.	128	55,013	7,893	94,813	11,128	14,530	1,764	48,221	6,458	82,101	86.50	12,712	7,212	1,631	13,316
	11 mos.	128	678,301	352,326	1,415,673	217,302	188,138	20,415	666,661	74,025	1,166,541	82.40	249,132	188,471	131,446	129,739
Union R. R. of Penna	Nov.	45	.....	.....	792,962	86,853	243,355	161	390,731	9,990	730,431	92.10	62,531	52,531	83,270	308,768
	11 mos.	45	.....	.....	9,928,867	1,265,693	3,143,192	2,277	4,578,776	96,302	9,085,346	91.50	843,521	649,857	1,350,937	3,479,900
Union Pacific	Nov.	3,687	7,361,078	1,154,693	9,512,957	1,010,935	1,774,686	145,573	2,545,229	275,969	5,910,118	62.10	3,602,839	2,991,700	2,744,504	3,409,801
	11 mos.	3,716	77,470,154	15,945,289	102,714,919	13,074,577	19,953,749	1,681,237	27,940,066	3,123,049	67,768,314	66.00	34,946,605	27,476,505	25,420,638	26,923,366
Oregon Short Line	Nov.	2,383	2,355,088	331,658	2,931,912	328,045	423,336	41,382	964,921	106,758	1,910,153	65.20	1,021,759	961,688	889,705	943,189
	11 mos.	2,373	25,061,374	4,604,399	32,152,508	5,389,006	5,672,790	503,049	10,072,320	1,218,951	23,485,549	73.00	8,666,959	5,879,890	5,122,768	5,609,065
Oregon, Wash. R. R. & Nav. Co.	Nov.	2,236	1,748,477	335,427	2,340,625	403,947	315,735	58,597	893,016	109,904	1,809,800	77.30	530,825	359,622	268,438	458,228
	11 mos.	2,232	19,680,060	4,465,130	26,546,066	4,921,385	4,176,782	693,898	9,521,648	1,270,310	20,887,313	78.70	5,658,753	3,775,977	2,694,256	797,654
St. Joseph & Grand Island	Nov.	258	242,441	19,988	279,683	59,750	46,160	2,774	100,805	11,237	221,054	79.00	58,629	35,316	21,957	58,466
	11 mos.	258	2,588,889	252,477	3,038,332	600,832	512,679	31,360	1,151,240	131,809	2,429,523	80.00	608,809	416,407	276,817	176,966
Utah	Nov.	102	158,370	345	159,368	20,776	30,435	341	25,397	6,137	93,086	58.40	66,282	61,148	48,352	34,425
	11 mos.	102	1,387,675	4,445	1,399,481	184,365	434,944	4,622	316,902	69,153	1,009,382	72.10	390,099	321,267	242,211	176,588
Virginian	Nov.	545	1,560,943	64,165	1,734,632	250,800	337,367	12,470	423,050	46,606	1,057,793	61.00	676,239	552,117	582,323	—188,463
	11 mos.	544	15,604,235	773,438	17,533,148	2,344,651	3,710,490	139,053	4,723,310	391,680	11,227,248	64.00	6,305,900	5,045,859	5,150,292	5,945,111
Wabash	Nov.	2,487	4,382,849	692,008	5,520,637	791,601	945,725	137,041	2,019,264	159,905	4,067,761	73.70	1,452,876	1,136,130	922,306	667,164
	11 mos.	2,486	47,163,786	8,515,504	60,106,124	9,156,369	10,627,404	1,500,615	22,763,277	1,765,642	46,090,202	76.70	14,015,922	11,339,622	8,450,711	8,414,442
Western Maryland	Nov.	804	1,462,505	52,156	1,580,609	281,882	315,547	36,667	480,913	45,052	1,170,797	74.10	409,812	344,812	293,115	404,414
	11 mos.	804	15,943,541	755,592	17,534,251	2,704,404	3,640,034	400,181	5,623,475	490,147	12,995,504	74.10	4,538,747	3,683,747	3,235,061	4,277,170
Western Pacific	Nov.	1,042	1,008,000	151,143	1,247,724	146,049	207,456	34,444	448,775	32,578	892,371	71.50	355,353	290,110	383,827	281,721
	11 mos.	1,042	10,133,250	1,972,701	13,333,440	2,601,171	2,313,038	394,321	4,441,076	418,662	10,589,500	79.40	2,743,940	1,921,069	2,776,930	2,830,389
Wheeling & Lake Erie	Nov.	511	1,393,718	46,142	1,557,957	216,053	415,600	25,684	541,649	37,482	1,238,157	79.50	319,800	223,075	199,297	261,981
	11 mos.	511	15,211,091	622,010	17,004,131	2,355,254	4,459,108	284,593	5,775,231	407,522	13,308,341	78.30	3,695,790	2,520,434	2,215,601	2,512,562

*Properties of Arizona Eastern Railroad Company were leased to Southern Pacific Company for operation as of November 8, 1924. Report for 7 days only.

Bills to Reduce Interest Rate in Debt to Government

Bills to reduce the rate of interest paid by railroads on their indebtedness to the federal government arising from the period of federal control and on account of loans from the revolving loan fund created by the transportation act have been introduced in Congress by Senator McLean of Connecticut and Representative Madden of Illinois as S. 3,772 and H. R. 11,074. Both bills provide that after January 1, 1925, the rate of interest on notes or other evidences of indebtedness issued by the carriers under section 207 or 210 of the transportation act shall be reduced and fixed at ¼ of 1 per cent above the average price paid for money by the government during the next preceding year, the exact amount to be determined by the Secretary of the Treasury. This would reduce the rate from 6 per cent to about 4¼ per cent at the present time, as the government has recently been borrowing on a 4 per cent basis, but the Madden bill provides that the rate shall not be less than 4½ per cent. Section 207 refers to the settlements of the carriers with the Railroad Administration, under which the carriers now owe approximately $180,000,000, largely on account of capital expenditures during federal control, and section 210 refers to the loans made by the Interstate Commerce Commission from the revolving fund, of which about $188,000,000 is still unpaid.

Conference on Railway Facilities for Peace River Valley

Prospects for improved railway facilities for the Peace river valley in Northern Alberta have brightened with the announcement in Ottawa that George P. Graham, Minister of Railways and Canals, will early in January call a conference in the federal capital to devise means for an immediate supply of the needs of the Peace river region. At that conference will be represented the Dominion government, the governments of Alberta and British Columbia, the Canadian National and Canadian Pacific.

Two or three plans to give better railway service to the Peace river country have been proposed in the last two years but the Dominion government has been reluctant to proceed with any one of them, largely owing to the considerable capital expenditure it would involve and also because provision for certain branch lines in the three Prairie Provinces was deemed more urgent. With these latter taken care of, or at least a number of them, the way is now cleared for Peace river.

Simplified Invoice Forms to Be Discussed

In an effort to bring about economies in current commercial practice through the adoption of standard inquiry, purchase order and invoice forms, the Division of Simplified Practice, Department of Commerce, has called a conference of trade associations to be held on January 14 in the Department of Commerce. The National Association of Purchasing Agents, at whose request the meeting was called, declares that a survey by that organization indicates a potential saving of more than $15,000,000 annually to the business concerns of the country through the adoption of such standard forms.

This estimate is based on a questionnaire sent to 35 average size business houses, asking an estimate of the amount which could be saved in clerical help annually if all invoices received were on an invoice form of standard form and size. The replies indicated an average of $620 each as the estimated possible saving—a sum which is declared to be a fair possibility for the 25,000 largest business concerns of the country.

The co-operative influence of the Railway Accounting Officers Association, the National Association of Cost Accountants and the Purchases and Stores Division of the American Railway Association has been thrown in with that of the National Association of Purchasing Agents; and 30 other national trade associations, covering widely different fields, are actively promoting the adoption and use of standard forms.

Kansas City Traffic Club Dinner to Santa Fe Officers

The Traffic Club of Kansas City recently gave a dinner in honor of officers of the Atchison, Topeka & Santa Fe which was attended by many of the principal officers of the railroad and many prominent citizens of Kansas City. The principal address was made by W. B. Storey, president of the Santa Fe, whose subject was, "Are We Happy?" Mr. Storey's answer to this question was in the negative. He spoke of the condition of the railroads of the United States at the present time as compared with previous years. He also outlined what the railroads hoped to accomplish if they are given freedom from burdensome legislation. He showed how it was necessary when railroads were first organized to have large returns as an inducement to secure capital and compared this with the present regulation of earnings of railroads by the Transportation Act. He spoke of the effect of government operation of the railroads and the effect of the shopmen's strike in 1922 and called attention to the efficient performance of the railroads in the past few years when operating unhampered. He called attention to the fact that 289 bills were introduced in the last session of Congress more or less directly affecting railroads. He concluded with a plea that the railroads be given a period of freedom from legislative interference and said that the railroads will be happier when they have been able to re-establish themselves in the graces of the public by the efficient manner in which they handle business.

Crow's Nest Pass Rates Temporarily Restored

Following several meetings of the Canadian Cabinet to consider the arguments of both sides to the controversy presented late in November an Order in Council was issued by the Dominion government on Christmas Day requesting the restoration of the Crow's Nest Pass Agreement, as a factor in Canadian freight rates, within fifteen days or before January 9 next. This restoration is to remain effective at least until a further order of the Dominion Railway Board following the judgment of the Supreme Court of Canada in the pending appeal of the three prairie provinces against the board's order setting aside the agreement on October 14 last.

No person or corporation, however, shall have the right, according to the government's Order in Council, to demand any refund of freight charges paid or owing in respect of any shipment made during the period of the higher rates, that is between October 29 when the Railway Board's order setting aside the agreement became effective, and January 9. The Order in Council also urges a speedy hearing by the Supreme Court of the appeal on points of law from the Western provinces. (The prairie provinces appealed from the board's order to the Supreme Court on points of law. That appeal has yet to be heard, probably early in January. Those provinces also appealed to the Privy Council [or federal Cabinet] from the board's order on points of merit or fact. That appeal was heard by the Cabinet in November, and the above Order in Council is a result of that hearing of appeal on points of fact.)

Canadian Supreme Court Upholds Railway Board in Discarding Rate Favoritism for Manitoba

After hearing F. H. Chrysler of Ottawa argue in support of the move and without calling counsel for the railways the Supreme Court of Canada last week abruptly closed the appeal of the government of Manitoba from the finding of the Dominion Railway Board four years ago setting aside the agreement between Manitoba and the former Canadian Northern Railway, and refused to grant the appeal. Much significance is attached to this action of the Supreme Court in view of the pending appeal before that body by the three Prairie provinces against the decision of the Dominion Railway Board in October last setting aside the Crow's Nest Pass Agreement as a factor in Canadian freight rates. There is a close similarity between the two agreements, both as to their nature and in their effect.

Mr. Chrysler, arguing for Manitoba, contended that the Manitoba agreement was a special act and the Dominion Railway Board had no authority to set it aside. This, in effect, is also the crux of the argument of the prairie provinces in their appeal against the Crow's Nest finding. From questions directed to Mr. Chrysler by members of the Supreme Court the latter seemed to be impressed with the fact that the Manitoba Agreement, when it was in effect prior to 1917 and if restored to effect now, would intensify discrimination against the provinces of Saskatchewan and Alberta.

The Manitoba Agreement between that province and the former Canadian Northern Railway, now a part of the Canadian National, was effected in 1901. By that pact the railway, in return for certain bond guarantees, gave reduced freight rates on grain from points in Manitoba to the head of the lakes. In 1917 the Dominion Railway Board, following the adoption by the Canadian Railways of the "McAdoo Wage Award," issued an order raising freight

rates to enable the railways to meet the increased cost of operation. As a result both the Crow's Nest and the Manitoba Agreements were suspended. An appeal was entered at the time against the suspension of the latter but it had remained in abeyance until last week when it was finally disposed of.

Railway Revenues and Expenses for November

Class I railroads having a total mileage of 235,772 miles had operating revenues in November amounting to $505,704,900, according to reports compiled by the Bureau of Railway Economics from returns filed with the Interstate Commerce Commission. This was a decrease of $26,181,450 or 4.9 per cent as compared with the same month last year.

Operating expenses totaled $374,217,400, a reduction of $32,698,350 or 8 per cent, and the net operating income was $93,177,560 as compared with $86,720,630 in November last year, or an increase of $6,456,930. In October, 1924, the net operating income was $127,105,100.

Class I railroads for the first 11 months this year had net operating income of $898,257,770, which was at the annual rate of return of 4.32 per cent on their property investment, compared with $913,336,797 or 4.52 per cent, for the same period last year.

Earnings by districts for the first 11 months, with the percentage of return based on property investment on an annual basis, were as follows:

		Per cent
New England Region	$32,116,588	3.60
Great Lakes Region	168,570,562	4.83
Central Eastern Region	178,711,285	4.21
Pocahontas Region	45,727,330	5.70
Total Eastern District	425,125,765	4.51
Total Southern District	127,521,461	5.21
Northwestern Region	96,611,559	3.15
Central Western Region	166,206,568	4.21
Southwestern Region	82,792,414	4.32
Total Western District	345,610,541	3.87
United States	898,257,767	4.32

Nineteen Class I carriers operated at a loss in November, of which 11 were in the Eastern district and 8 in the Western district. In October, 11 roads had operating deficits.

While operating revenues in November showed a decrease of only 4.9 per cent under those of the same month last year, operating expenses were reduced 8 per cent. This decrease in part was due to a reduction of $20,727,190 or about 11 per cent in maintenance expenses for the month of November. For the first 11 months period alone, there was a reduction in maintenance expenses of $213,587,763, or over 10 per cent.

Carriers in the Eastern district had a net operating income in November of $37,224,000, as compared with $31,621,780 in November last year. Freight traffic in the Eastern district in November, according to incomplete returns, was about one per cent under that of the corresponding period last year. Operating revenues of the Eastern carriers totaled $239,668,000, a decrease of 6 per cent. Operating expenses totaled $186,700,200, a decrease of 10.2 per cent. Class I carriers in the Eastern district earned during the first 11 months this year $425,125,750 of net operating income, as compared with $450,864,850 during the corresponding period last year.

Class I carriers in the Southern district in November had a net operating income of $12,360,000, as compared with $10,442,250 in November last year. Freight traffic on the Southern roads in November was about three per cent above that of the same month last year. Operating revenues of the Southern carriers in November totaled $66,840,000, a decrease of 1.7 per cent, while operating expenses totaled $49,571,860, a decrease of 6.6 per cent. The net operating income for the Class I roads in the Southern district for the first 11 months this year was $127,521,460, as compared with $118,285,270 during the same period last year.

Carriers in the Western district, according to complete reports except for the Nevada Northern, had a net operating income in November of $43,593,400, as compared with $44,656,590 for the same month last year. Freight traffic in the Western district showed an increase of approximately 1½ per cent. Operating revenues of the Western carriers totaled $199,196,860, a decrease of 4.6 per cent, while operating expenses totaled $137,945,300, a decrease of 5.5 per cent. Class I carriers in the Western district during the first 11 months this year had a net operating income of $345,610,540, as compared with $344,186,680 during the same period one year ago.

New England Bus Competition Cases

The Boston & Maine has brought suit in the state district court at Greenfield, Mass., against the De Luxe Transportation Company operating buses between Greenfield, Mass., and Springfield. The road claims unfair competition and that the bus company is operating without having secured proper licenses from the local authorities.

Boston & Maine announcement that on February 27, it will close its station at Ashburnham, Mass., and discontinue freight service on the three-mile branch between Ashburnham and So. Ashburnham has resulted in prompt protest by the Ashburnham town authorities. Several months ago the railroad substituted passenger train service on this branch with highway bus service.

The New York, New Haven & Hartford and the United Railways of Providence obtained temporary injunctions in the superior court at Providence, R. I., restraining operation of seven bus lines, one between Providence and Attleboro, Mass., one between Crompton, R. I., and Phenix and five between Woonsocket, R. I., and Blackstone. The first competes with the railroad and the other six with the trolley company.

The New Haven has notified the Rhode Island Public Utilities Commission that on January 11 it will discontinue passenger service on its line between Woonsocket, R. I., and Pascoag, 11 miles. Freight service will be continued. Private automobile and trolley service competition are assigned as the reasons.

The New Hampshire Public Service Commission, in its biennial report, declares the most difficult railroad problem in the state to be unprofitable branch lines that "Are a burden on the rest of the system," and expresses belief that the railroads will be permitted to try other methods to solve the transportation problem. The proposal by the Boston & Maine to substitute motors for the steam service was referred to with the statement that: "Those communities which cannot support steam train service can be accommodated adequately by the operation of motor trucks and motor buses throughout the year," with the possible exception of the time when the frost is coming out of the ground.

After suggesting the possible reduction of cars and crews on trains, and the substitution of unit cars with gasoline engines as other means of reducing costs, the commission said the latter experiments had not been entirely successful, adding: "At any rate, we firmly believe that the railroads should be permitted to try out these methods, or some other method of transportation which will meet the service requirements. If legislation is necessary to enable the railroads to do this, then we recommend such legislation with proper safeguards to protect the adequacy of the service."

"If the railroads wish to keep their business," the commission says, "they must supply the kind of service the public wants."

Meetings and Conventions

The following list gives names of secretaries, dates of next or regular meetings and places of meetings.

AIR BRAKE ASSOCIATION.—F. M. Nellis, 165 Broadway, New York City. Next convention, May 5-8, 1925, Los Angeles, Calif. Exhibit by Air Brake Appliance Association.

AIR BRAKE APPLIANCE ASSOCIATION.—John Wright, Westinghouse Electric & Manufacturing Co. Meeting with Air Brake Association.

AMERICAN ASSOCIATION OF ENGINEERS.—C. E. Drayer, 63 E. Adams St., Chicago. Next convention, 1925, Orlando, Fla.

AMERICAN ASSOCIATION OF FREIGHT TRAFFIC OFFICERS.—Grant Williams, 1341 Railway Exchange, Chicago.

AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS.—E. L. Duncan, 332 So. Michigan Ave., Chicago. Annual meeting, June 23, 1925, Portland, Ore.

AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—W. C. Hope, C. R. R. of N. J., 143 Liberty St., New York.

AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—J. Rothehild, Room 400, Union Station, St. Louis, Mo. Next convention, June 16-19, 1925, Richmond, Va.

AMERICAN ASSOCIATION OF SUPERINTENDENTS OF DINING CARS.—L. A. Stone, C. & E. I. Ry., Chicago.

AMERICAN ELECTRIC RAILWAY ASSOCIATION.—J. W. Welsh, 8 W. 40th St., New York.

AMERICAN RAILROAD MASTER TINNERS', COPPERSMITHS' AND PIPE FITTERS' ASSOCIATION.—C. Borcherdt, 202 North Hamilton Ave., Chicago, Ill.

AMERICAN RAILWAY ASSOCIATION.—H. J. Forster, 30 Vesey St., New York, N. Y.

Division I.—Operating.—J. C. Caviston, 30 Vesey St., New York.

Freight Station Section (including former activities of American Association of Freight Agents).—R. O. Wells, Freight Agent, Illinois Central Railroad, Chicago, Ill. Next meeting, May 19-21, 1925, Kansas City, Mo.

Medical and Surgical Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.

Protective Section (including former activities of the American Railway Chief Special Agents and Chiefs of Police Association).—J. C. Caviston, 30 Vesey St., New York, N. Y.

Safety Section.—J. C. Caviston, 30 Vesey St., New York.
Telegraph and Telephone Section (including former activities of the Association of Railroad Telegraph Superintendents). W. A. Fairbanks, 30 Vesey St., New York.
Division II.—Transportation (including former activities of the Association of Transportation and Car Accounting Officers).—G. W. Covert, 431 South Dearborn St., Chicago, Ill.
Division III.—Traffic, J. Gottschalk, 143 Liberty St., New York.
Division IV.—Engineering, E. H. Fritch, 431 South Dearborn St., Chicago, Ill. Next annual meeting, March 10-12, 1925, Chicago. Exhibit by National Railway Appliances Association.
Construction and Maintenance Section.—E. H. Fritch.
Electric Section.—E. H. Fritch.
Signal Section (including former activities of the Railway Signal Association).—H. S. Balliet, 30 Vesey St., New York, N. Y. Annual meeting, March 12 and 13, 1925, Hotel Drake, Chicago.
Division V.—Mechanical (including former activities of the Master Car Builders' Association and the American Railway Master Mechanics' Association).—V. R. Hawthorne, 431 South Dearborn St., Chicago, Ill. Business meeting, June 15, 1925. No exhibit in 1925.
Equipment Painting Section (including former activities of the Master Car and Locomotive Painters' Association).—V. R. Hawthorne, 431 South Dearborn St., Chicago, Ill.
Division VI.—Purchases and Stores (including former activities of the Railway Storekeepers' Association).—W. J. Farrell, 30 Vesey St., New York, N. Y. Exhibit by Railway Supply Manufacturers' Association.
Division VII.—Freight Claims (including former activities of the Freight Claim Association).—Lewis Pilcher, 431 South Dearborn St., Chicago, Ill. Annual meeting, May 25, 1925, Kansas City, Mo.
Car Service Division—C. A. Buch, 17th and H Sts., N. W., Washington, D. C.

AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—C. A. Lichty, C. & N. W. Ry., 319 N. Waller Ave., Chicago. Exhibit by Bridge and Building Supply Men's Association.

AMERICAN RAILWAY DEVELOPMENT ASSOCIATION.—A. L. Moorshead, Industrial Engineer, Erie R. R., New York, N. Y. Next meeting, May 13-15, 1925, San Antonio, Texas.

AMERICAN RAILWAY ENGINEERING ASSOCIATION.—(Works in co-operation with the American Railway Association, Division IV.) E. H. Fritch, 431 South Dearborn St., Chicago. Annual meeting, March 10-12, 1925, Chicago. Exhibit by National Railway Appliances Association.

AMERICAN RAILWAY MASTER MECHANICS' ASSOCIATION.—(See American Railway Association, Division V.)

AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—G. G. Macina, C. M. & St. P. Ry., 11402 Calumet Ave., Chicago. Exhibit and Supply Association of the American Railway Tool Foremen's Association.

AMERICAN SHORT LINE RAILROAD ASSOCIATION.—T. F. Whittelsey, 1319-21 F St., N. W., Washington, D. C.

AMERICAN SOCIETY FOR STEEL TREATING.—W. H. Eisenman, 4600 Prospect Ave., Cleveland, Ohio.

AMERICAN SOCIETY FOR TESTING MATERIALS.—C. L. Warwick, 1315 Spruce St., Philadelphia, Pa. Annual meeting, June 22-26, Chalfonte-Haddon Hall, Atlantic City, N. J.

AMERICAN SOCIETY OF CIVIL ENGINEERS.—33 W. 39th St., New York. Regular meetings 1st and 3rd Wednesdays in month, except July and August, 33 W. 39th St., New York.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—Calvin W. Rice, 29 W. 39th St., New York. Railroad Division, A. F. Stuebing, Chief Engineer, Bradford Draft Gear Co., 23 W. 43rd St., New York.

AMERICAN TRAIN DISPATCHERS' ASSOCIATION.—C. L. Darling, 10 East Huron St., Chicago, Ill. Biennial convention, July 20, 1925, Chicago.

AMERICAN WOOD PRESERVERS' ASSOCIATION.—P. R. Hicks, Room 1146, Otis Bldg., Chicago. Annual meeting, February 3-5, 1925, Congress Hotel, Chicago.

ASSOCIATION OF RAILWAY CLAIM AGENTS.—H. D. Morris, District Claim Agent, Northern Pacific Ry., St. Paul, Minn. Annual meeting, June 17, 1925, Winnipeg, Canada.

ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS.—Jos. A. Andreucetti, C. & N. W., Room 411, C. & N. W. Sta., Chicago. Exhibit by Railway Electrical Supply Manufacturers' Association.

ASSOCIATION OF RAILWAY EXECUTIVES.—Stanley J. Strong, 17th and H Sts., N. W., Washington, D. C.

ASSOCIATION OF RAILWAY SUPPLY MEN.—E. E. Thulin, Peoples Gas Bldg., Chicago. Meeting with International Railway General Foremen's Association.

ASSOCIATION OF RAILWAY TELEGRAPH SUPERINTENDENTS.—(See American Railway Association, Division I.)

ASSOCIATION OF TRANSPORTATION AND CAR ACCOUNTING OFFICERS.—(See American Railway Association, Division II.)

BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—B. J. Wilson, Pocket List of Railroad Officials, 605 Fisher Building, Chicago. Meeting with American Railway Bridge and Building Association.

CANADIAN RAILWAY CLUB.—C. R. Crook, 129 Charron St., Montreal, Que.

CAR FOREMEN'S ASSOCIATION OF CHICAGO.—Aaron Kline, 626 North Pine Ave., Chicago. Regular meetings, 2nd Monday in month, except June, July and August, Great Northern Hotel, Chicago.

CAR FOREMEN'S ASSOCIATION OF ST. LOUIS, MO.—R. E. Giger, 721 North 23rd St., East St. Louis, Ill. Meetings, first Tuesday in month at the American Hotel Annex, St. Louis.

CENTRAL RAILWAY CLUB.—Harry D. Vought, 26 Cortlandt St., New York. Regular meetings, 2nd Thursday, January to November. Interim meetings, 2nd Thursday, February, April, June, Hotel Statler, Buffalo, N. Y.

CHICAGO CLAIM CONFERENCE. Personal Injury Section.—Parks C. Archer, General Claim Agent, Chicago & Alton R. R., 340 Harrison St., Chicago. Meets 12:30 p. m., first Monday each month, City Club, 315 Plymouth Court, Chicago.

CHIEF INTERCHANGE CAR INSPECTORS' AND CAR FOREMEN'S ASSOCIATION.—A. S. Sternberg, Belt Ry. of Chicago, Polk and Dearborn Sts., Chicago.

CHIEF INTERCHANGE CAR INSPECTORS' AND CAR FOREMEN'S SUPPLY MEN'S ASSOCIATION.—Bradley S. Johnson, W. H. Miner, Rookery Bldg., Chicago, Ill. Meeting with Chief Interchange Car Inspectors' and Car Foremen's Association.

CINCINNATI RAILROAD CLUB.—W. C. Cooder, Union Central Bldg., Cincinnati, Ohio. Meetings, 2nd Tuesday in February, May, September and November.

CLEVELAND STEAM RAILWAY CLUB.—F. L. Frericks, 14416 Adler Ave., Cleveland, Ohio. Meetings, first Monday each month, Hotel Cleveland, Public Square, Cleveland.

EASTERN RAILROAD ASSOCIATION.—E. N. Bessling, 614 F St., N. W., Washington, D. C. Annual meeting, May 14, 1925, Railroad Club, New York.

FREIGHT CLAIM ASSOCIATION.—(See American Railway Association, Division VII.)

GENERAL SUPERINTENDENTS' ASSOCIATION OF CHICAGO.—C. H. Treichel, Grand Central Station, Chicago. Regular meetings, Wednesdays, preceding 3rd Friday in month, Room 1414, Manhattan Bldg., Chicago.

INTERNATIONAL RAILROAD MASTER BLACKSMITH'S ASSOCIATION.—W. J. Mayer, Michigan Central R. R., Detroit, Mich. Next meeting, August 18-20, 1925, Hotel Winston, Cleveland, O. Exhibit by International Railroad Master Blacksmiths' Supply Men's Association.

INTERNATIONAL RAILROAD MASTER BLACKSMITHS' SUPPLY MEN'S ASSOCIATION.—George P. White, 747 Railway Exchange, Chicago. Meeting with International Railroad Master Blacksmiths' Association.

INTERNATIONAL RAILWAY CONGRESS.—Office of Permanent Commission of the Association, 17 rue de Louvain, Brussels, Belgium. Secretary, J. Verdeyen. Next session of the Congress, London, June 22-July 6, 1925.

INTERNATIONAL RAILWAY FUEL ASSOCIATION.—J. B. Hutchison, 6000 Michigan Ave., Chicago. Next annual convention. May 26-29, 1925, Hotel Sherman, Chicago. Exhibit by International Railway Supply Men's Association.

INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.—Wm. Hall, 1061 W. Wabash Ave., Winona, Minn. Annual convention, September, 1925, Hotel Sherman, Chicago.

INTERNATIONAL RAILWAY SUPPLY MEN'S ASSOCIATION.—F. S. Wilcoxen, Edna Brass Manufacturing Company, Cincinnati, Ohio. Meeting with International Railway Fuel Association.

MASTER BOILER MAKERS' ASSOCIATION.—Harry D. Vought, 26 Cortlandt St., New York. Next convention, May 19-22, 1925, Hotel Sherman, Chicago.

MASTER CAR AND LOCOMOTIVE PAINTERS' ASSOCIATION.—(See A. R. A., Division V.)

MASTER CAR BUILDERS' ASSOCIATION.—(See A. R. A., Division V.)

MOBILE TRAFFIC & TRANSPORTATION CLUB.—T. C. Schley, 71 Conti St., Mobile, Ala. Regular dinner meetings, 6 p. m. on 2nd Thursday of each month, Battle House Hotel, Mobile, Ala.

NATIONAL ASSOCIATION OF RAILWAY TIE PRODUCERS.—J. S. Penney, T. J. Moss Tie Company, St. Louis, Mo. Next convention, 1925, Chicago.

NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS.—James B. Walker, 49 Lafayette St., New York.

NATIONAL FOREIGN TRADE COUNCIL.—O. K. Davis, 1 Hanover Square, New York.

NATIONAL HIGHWAY TRAFFIC ASSOCIATION.—Elmer Thompson, 12 East 53rd St., New York.

NATIONAL RAILWAY APPLIANCES ASSOCIATION.—C. W. Kelly, 825 South Wabash Ave., Chicago. Annual exhibition at convention of American Railway Engineering Association. Exhibit, March 9-12, 1925, incl.

NATIONAL SAFETY COUNCIL.—Steam Railroad Section: E. R. Cott, Safety Agent, Hocking Valley Ry., Columbus, Ohio.

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings, 2nd Tuesday in month, excepting June, July, August and September, Copley-Plaza Hotel, Boston, Mass.

NEW YORK RAILROAD CLUB.—Harry D. Vought, 26 Cortlandt St., New York. Regular meetings, 3rd Friday in month, except June, July and August, at 29 W. 39th St., New York.

PACIFIC RAILWAY CLUB.—W. S. Wollner, 64 Pine St., San Francisco, Cal. Regular meetings, 2nd Thursday in month, alternately in San Francisco and Oakland.

RAILWAY ACCOUNTING OFFICERS' ASSOCIATION.—E. R. Woodson, 1116 Woodward Building, Washington, D. C.

RAILWAY BUSINESS ASSOCIATION.—Frank W. Noxon, 600 Liberty Bldg., Broad and Chestnut Sts., Philadelphia, Pa.

RAILWAY CAR MANUFACTURERS' ASSOCIATION.—W. C. Tabbert, 61 Broadway, New York.

RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, 515 Grandview Ave., Pittsburgh, Pa. Regular meetings, 4th Thursday in month, except June, July and August, Fort Pitt Hotel, Pittsburgh, Pa.

RAILWAY DEVELOPMENT ASSOCIATION.—(See Am. Ry. Development Assn.)

RAILWAY ELECTRICAL SUPPLY MANUFACTURERS' ASSOCIATION.—J. Scribner, General Electric Co., Chicago. Annual meeting with Association of Railway Electrical Engineers.

RAILWAY EQUIPMENT MANUFACTURERS' ASSOCIATION.—Joseph Sinkler, Pilot Packing Co., Peoples Gas Bldg., Chicago. Meeting with Traveling Engineers' Association.

RAILWAY FIRE PROTECTION ASSOCIATION.—R. R. Hackett, Baltimore & Ohio R. R., Baltimore, Md.

RAILWAY REAL ESTATE ASSOCIATION.—C. C. Marlor, Room 1143, Transportation Building, Chicago.

RAILWAY SIGNAL ASSOCIATION.—(See A. R. A., Division IV., Signal Section.)

RAILWAY STOREKEEPERS' ASSOCIATION.—(See A. R. A., Division VI.)

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 1841 Oliver Bldg., Pittsburgh, Pa. Meets with Mechanical Division, A. R. A. No exhibit in 1925.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, 30 Church St., New York. Meets with Telegraph and Telephone Section of A. R. A., Division I.

RAILWAY TREASURY OFFICERS' ASSOCIATION.—L. W. Cox, Commercial Trust Bldg., Philadelphia, Pa.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—P. J. McAndrews, C. & N. W. Ry., Sterling, Ill. Next convention, 1925, Kansas City, Mo. Exhibit by Track Supply Association.

ST. LOUIS RAILWAY CLUB.—B. W. Frauenthal, Union Station, St. Louis, Mo. Regular meetings, 2nd Friday in month, except June, July and August.

SIGNAL APPLIANCE ASSOCIATION.—F. W. Edmunds, Sunbeam Electric Manufacturing Company, New York City. Meeting with American Railway Association, Signal Section.

SOUTHEASTERN CARMEN'S INTERCHANGE ASSOCIATION.—J. E. Rubley, Southern Railway Shop, Atlanta, Ga. Meets semi-annually.

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.—A. J. Merrill, P. O. Box 1205, Atlanta, Ga. Regular meetings, 3rd Thursday in January, March, May, July, September and November, Piedmont Hotel, Atlanta.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—J. L. Carrier, Car. Serv. Agent, Tenn. Cent. Ry., 319 Seventh Ave., North Nashville, Tenn.

SUPPLY ASSOCIATION OF AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—H. S. White, 9 N. Jefferson St., Chicago.

TRACK SUPPLY ASSOCIATION.—W. C. Kidd, Ramapo-Ajax Corporation, Hillburn, N. Y. Meets with Roadmasters' and Maintenance of Way Association.

TRAVELING ENGINEERS' ASSOCIATION.—W. O. Thompson, 1177 East 98th St., Cleveland, Ohio. Annual meeting, September, 1925, Chicago. Exhibit by Railway Equipment Manufacturers' Association.

WESTERN RAILWAY CLUB.—Bruce V. Crandall, 226 West Jackson Boulevard, Room 1001, Chicago. Annual meeting, May 23, Edgewater Beach Hotel, Chicago. Regular meetings, 3rd Monday each month, except June, July and August.

WESTERN SOCIETY OF ENGINEERS.—Edgar S. Nethercut, 138 W. Madison St., Chicago, Ill.

Traffic News

Traffic to East Heavy

Fifteen hundred passengers left Chicago for the East on January 4 over three roads operating between Chicago and New York. The automobile show in New York, the return of students to eastern schools after the holidays and a general eastern movement of salesmen, are the reasons for the unusual traffic.

The 20th Century Limited of the New York Central established a record on January 4 when it carried 743 passengers from Chicago to New York on six sections. Additional sections also were operated on other trains, the Lake Shore Limited being operated in three sections, the Fifth Avenue Special in two sections and the Wolverine in three sections. The Boston section of the Wolverine carried 241 passengers, of which the majority were students. The Pennsylvania operated the Broadway Limited in three sections, the Washington-Broadway in two sections and two other trains in two sections each. During the first three days of the year traffic eastward required 13 extra sections. The Capitol Limited of the Baltimore & Ohio was operated in two sections during the first five days of the year.

Freight Commodity Statistics

The Interstate Commerce Commission has issued a statement showing by districts the freight tonnage transported by Class I steam railways for the quarter ended September 30, 1924. Below will be found a comparison, by general classes of commodities, of the total tonnage transported during the third quarter in 1924 with the corresponding period in 1923:

	Number of tons originated		
Classes of commodities	Quarter ended Sept. 30, 1923	Quarter ended Sept. 30, 1924	Per cent of decrease 1924 from 1923
Products of agriculture	26,685,646	30,593,365	*14.64
Animals and products	6,924,133	6,709,072	3.11
Products of mines	205,254,449	175,872,450	14.31
Products of forests	28,494,514	24,284,475	14.77
Manufactures and miscellaneous	68,762,512	64,876,835	5.65
All l. c. l. freight	11,201,865	10,642,082	10.35
Total	347,323,119	312,378,279	10.06
	Total Tons Carried		
Products of agriculture	51,294,999	57,578,369	*12.25
Animals and products	11,992,358	11,921,145	.59
Products of mines	349,028,554	295,701,072	15.28
Products of forests	54,209,791	47,963,745	11.52
Manufactures and miscellaneous	133,014,498	127,277,946	4.31
All l. c. l. freight	18,723,004	16,727,293	10.66
Total	618,263,204	557,169,570	9.88

* Increase.

Missouri Pacific Traffic Breaks Record

The Missouri Pacific finished a year of record breaking business with a December in which volume of traffic handled as reflected in car loadings was the greatest ever experienced for that month by the railroad. During December the company loaded locally along its lines 97,182 cars of freight which is an increase of 26 per cent over the previous record made in December, 1923. Receipts from connections were 33,150 carloads, a gain of 1,795 cars over 1923. The total number of cars of revenue freight handled amounted to 130,332 or 21,323 cars above the former record. The daily average was 5,013 carloads which breaks a mark of eight years standing.

During 1924, 1,527,490 carloads of revenue freight were handled which exceeds the previous record set in 1923 by 79,355 cars. This total represents 1,102,660 cars loaded locally and 424,771 carloads received from connections or a daily average of 4,976. All previous high marks for local loadings were broken in eleven of the twelve months of 1924 and the other month, June, fell only 660 cars below the best June in the railroad's history. Figures for the total carloads of revenue freight by months show that 9 months in 1924 were the best ever experienced for such months. Passenger traffic due to the greatly increased use of automobiles showed a decrease of $1,527,000 for the year. The average number of miles per car per day maintained during December was 32.66 or 6 miles above the average for the full year of 1923. The on-time performance of passenger trains was 91.7 per cent.

Commission and Court News

Interstate Commerce Commission

The commission has modified the order providing for an investigation of the divisions of freight rates in Western and Mountain-Pacific territories to include within its scope the subdivisions west of Chicago, Peoria and points on the Mississippi river, St. Louis to St. Paul and Minneapolis, inclusive, of the revenue received by respondents on freight moving between points in the Western and Mountain-Pacific groups and Eastern groups via those traffic gateways.

Personnel of Commissions

Commissioner Mark W. Potter of the Interstate Commerce Commission has indicated to the President his desire to resign from the commission and return to private business, it was officially stated at the White House on January 2, but the President hopes to be able to persuade him to remain. There have been many rumors in the past of Commissioner Potter's intention of resigning and it is understood that he had recently set January 15 as the effective date.

While it is expected that Commissioner Potter will remain at least until he has cleared up his docket, the usual pulling of strings for the appointment of his successor is going on at a lively rate. Representatives of Southern states are trying particularly to have an appointment made from their section and there have been many rumors among others that Senator Dial of South Carolina, who failed of re-election to the Senate in the last election, might be selected for the place.

Aitchison Elected Chairman of I. C. C.

Clyde B. Aitchison, of Oregon, has been elected chairman of the Interstate Commerce Commission for the year 1925, in accordance with the commission's usual practice of rotating the office of chairman among its members in order of seniority. Mr. Aitchison was originally appointed a member of the commission by President Wilson in 1917 and was chairman during the year 1919. He was born on February 22, 1875, at Clinton, Ia. He practiced law at Council Bluffs, Ia., from 1896 to 1903 and at Portland, Ore., from 1903 to 1907. He was clerk of the state tax commission of Oregon from June, 1905, to July 1, 1906, and was one of the authors of the Oregon Railroad Commission law, adopted February 18, 1907. He was appointed a member of the Railroad Commission of Oregon for a short term, was elected a member in June, 1908, was elected chairman in January, 1911, and re-elected on November 5, 1912. In 1916 he resigned to become solicitor for the valuation committee of the National Association of Railway Commissioners. With office at Washington he took an active part in representing the interests of the state commissions in connection with the valuation of railroads being made by the Interstate Commerce Commission. His first appointment to the commission was for a term ending in 1921 as one of the two additional commissioners authorized by the law of August 9, 1917, and he was reappointed by President Harding for a term ending December 31, 1928.

Clyde B. Aitchison

Labor News

A New Protest Against Western Enginemen's Wage Increases

The Conference Committee of Managers, representing the western railways, on December 24 presented to the United States Railroad Labor Board a petition supplementary to that previously sent to the board which asked it to suspend and set aside the settlement made by the Southern Pacific with its engineers and firemen, asking that the board recall its decision advancing the wage rate of engineers and firemen on the western roads approximately 6 per cent. The second petition was filed at about the same time that the board was declining to intervene in the settlement between the Southern Pacific and the Brotherhood of Locomotive Engineers and the Brotherhood of Locomotive Firemen & Enginemen. The board's attitude on that case was reported in the Railway Age of December 27.

The managers' committee declared that unless the enginemen's organizations are required to respect the rulings of the Labor Board "upon which the public is represented respecting reasonable wages and working conditions and if they are allowed to force upon the railways unreasonable increases in operating costs the result must be to make it necessary for the people of western territory to pay higher railway rates."

The committee added that "from the results of studies conducted by the board the only justification you could have had for increasing the rates of pay of these classes of employees was the relief that you afforded the carriers from burdensome and restrictive rules which would in some measure offset the increases of wages granted by your board. Such being the case it is a self-evident fact that since the engineers' and firemen's organizations forced the Southern Pacific to forego the relief from the rules afforded by your board there is no justification whatever for the increases in wages; and hence your board should immediately set the increases aside."

In support of its contention that no advances in wages not accompanied by relief from burdensome and restrictive rules is justifiable the conference committee said:

"There is in effect on all but one or two of the railroads here represented certain regulations known as the 'Chicago Joint Working Agreement' which provides that as soon as an engineer or fireman in passenger service has run the equivalent of 4,800 miles, or in freight service the equivalent of 3,800 miles in any one month he is required to lay off the remainder of the month. Under the terms of this so-called agreement a large percentage of engineers and firemen are required to lay off during the course of the year a considerable part of the time—in many instances, more than 100 days. Despite these enforced lay-offs we find that on 36 of the railroads here represented the wages of a large percentage of engineers ranged from $3,000 to $4,000 for the year 1923 and of firemen from $2,000 to $3,000. The average wage per month for all passenger engineers on all Class I railroads in the United States in 1923 was $234; for freight engineers, $237; for passenger firemen $188, and for freight firemen $179. The average hours per day worked by passenger men was less than seven and for freight men less than eight hours.

"These facts conclusively prove that the engineers and firemen are not only fairly but more than well paid and they should be interesting to the farmers and communities traversed by these roads. The conference committee of managers venture the thought that if the earnings of farmers from their investment in their farms and in equipment necessary to operate them, and in addition the earnings of the farmer and all other members of his family working from daylight to darkness, equalled or was in any way near the average earnings of each individual engineer or fireman the farmer for the year 1923 would have enjoyed a degree of prosperity never before experienced.

"The above facts as to the earnings of these enginemen and the importance of their being controlled emphasize the necessity for a tribunal such as the United States Labor Board to which disputes such as these can be referred. It should be perfectly obvious to your board and to the public that the principal reason for the substitute (Howell-Barkley bill) recently proposed for Title 3 of the Transportation Act was and is for the purpose of preserving as minima the rates and rules now in effect."

Equipment and Supplies

Locomotives

THE OESTE DE MINAS E. DE F., Brazil, has ordered one Pacific type, three-cylinder locomotive from the Baldwin Locomotive Works.

THE CANADIAN NATIONAL will place orders soon for 4 Mountain type locomotives for use in the United States on the Grand Trunk Western.

THE BELT RAILWAY OF CHICAGO has ordered 5 switching locomotives from the Baldwin Locomotive Works. One of these locomotives is to have three cylinders.

THE UNION PACIFIC, reported in the *Railway Age* of January 3 as inquiring for one locomotive, has placed an order for it with the American Locomotive Company.

Freight Cars

SWIFT & COMPANY, Chicago, is inquiring for 150 stock cars.

THE UNION PACIFIC is inquiring for 500 gondola cars and for 500 flat cars.

THE CANADIAN NATIONAL is inquiring for 500 steel underframe automobile box cars.

THE CHICAGO, INDIANAPOLIS & LOUISVILLE is inquiring for 250 composite hopper cars.

THE NORFOLK & WESTERN is asking for prices on the repair of about 1,580 gondola cars of 57½ tons' capacity.

THE DELAWARE, LACKAWANNA & WESTERN is asking for bids on 1,000 steel underframe box cars of 55 tons' capacity.

THE SAN PAULO RIO GRANDE, Brazil, is inquiring through the car builders for 30 cars, to include flat cars and box cars.

THE SOUTH AFRICAN RAILWAYS are inquiring through the car builders for 300 high-side, 8-wheel, bogie wagons of 50 tons' capacity.

THE OKLAHOMA CITY-ADA-ATOKA is inquiring for 50 single sheathed box cars of 40 tons' capacity and 50 all steel box cars of 50 tons' capacity.

THE LEHIGH & NEW ENGLAND has placed an order with the Pressed Steel Car Company for the conversion of 197 composite gondola cars into box cars.

THE NORTHERN PACIFIC has ordered 500 box car underframes from the Ryan Car Company, inquiry for which was reported in the *Railway Age* of December 27.

THE SEABOARD AIR LINE is inquiring for 80 steel underframe caboose cars with wooden superstructures, and is asking for prices on the repair of 1,000 box cars.

THE FLORIDA EAST COAST, reported in the *Railway Age* of December 6 as inquiring for 20 caboose cars, has ordered this equipment from the Magor Car Corporation.

THE NORTHERN PACIFIC, reported in the *Railway Age* of December 6 as inquiring for 1,000 automobile cars, has ordered 500 from the Pullman Car & Manufacturing Corporation and 500 from the Pacific Car & Foundry Company.

THE MISSOURI PACIFIC, reported in the *Railway Age* of December 20 as expecting to let contracts for 1,000 additional cars, has ordered 250 hopper cars from the Standard Steel Car Company; 375 gondola cars from the Pennsylvania Car Company and 375 gondola cars from the Pullman Car & Manufacturing Corporation.

THE CHICAGO, BURLINGTON & QUINCY, reported in the *Railway Age* of December 27 as inquiring for 1,000 automobile cars of 50 tons' capacity and 1,000 automobile cars of 40 tons' capacity.

has ordered 1,500 automobile cars of 40 tons' capacity and 500 automobile cars of 50 tons' capacity from the Pullman Car & Manufacturing Corporation.

THE BALTIMORE & OHIO has placed orders for 3,000 freight cars and 2,000 freight car bodies. The orders include 2,500 gondola cars ordered from the Standard Steel Car Company, 500 gondola cars from the General American Car Company and 2,000 box car bodies from the Pullman Car & Manufacturing Corporation. The box car bodies are to be mounted on rebuilt trucks. An item to the effect that these purchases were in contemplation appeared in the *Railway Age* of December 20.

Passenger Cars

THE UNION PACIFIC is inquiring for 15 baggage cars, 15 coaches, 5 observation cars and 5 dining cars.

THE LEHIGH & NEW ENGLAND has ordered one business car from the American Car & Foundry Company.

THE READING COMPANY has ordered 5 combination baggage and mail cars from the American Car & Foundry Company and 5 combination baggage and mail cars from the Bethlehem Shipbuilding Corporation.

THE MISSOURI PACIFIC has placed orders for 36 passenger cars, including 10 baggage cars, 10 mail storage and 1 combination passenger and mail car from the American Car & Foundry Company; 9 combination mail and baggage cars and 6 divided coaches from the Pullman Car & Manufacturing Corporation. Inquiry for these cars was reported in the *Railway Age* of December 6. The Missouri Pacific has also placed an order for two dining cars with the American Car & Foundry Company. Inquiry for these cars was reported in the *Railway Age* of December 13.

Iron and Steel

THE CHICAGO, BURLINGTON & QUINCY is inquiring for 1,500 tons of structural steel for bridge work.

THE LONG ISLAND has ordered 250 tons of steel for bridge work from the McClintock-Marshall Company.

THE BALTIMORE & OHIO has ordered 1,000 tons of steel for bridges from the American Bridge Company and 225 tons from the Fort Pitt Bridge Works.

THE CHICAGO & NORTH WESTERN has ordered 27,000 tons of rail from the Illinois Steel Company, 7,000 tons from the Inland Steel Company, and 7,000 tons from the Bethlehem Steel Corporation.

Machinery and Tools

THE MOUNT VERNON CAR MANUFACTURING COMPANY has placed an order for a 48-in. car wheel borer.

THE NEW YORK CENTRAL has placed orders for machinery including a 66-in. horizontal boring and drilling machine; 27-in. by 16-ft. engine lathe; 25-in. to 50-in. sliding bed gap lathe; 6-in. centering machine and a 3-in. pipe machine.

Miscellaneous

THE NORTHERN PACIFIC has ordered two, 100-ft. turntables for installation at Helena, Mont., and Auburn, Wis., from the American Bridge Company.

Signaling

THE ST. LOUIS-SAN FRANCISCO has placed an order with the National Safety Appliance Company for train control material for an addition to its train control installation to extend from Logan, Mo., to Aurora, approximately seven miles. The St. Louis-San Francisco automatic train control installation will then extend from Nicholas, Mo., to Aurora, a distance of 27 miles of single track road.

Supply Trade News

C. B. Lewis, chief engineer of the **Northwestern Expanded Metal Company,** with headquarters at Chicago, has resigned.

The Colorado Fuel & Iron Company will spend approximately $3,500,000 for improvements and enlargements during 1925.

The Weston Electrical Instrument Company, Newark, N. J., has changed its name to the **Weston Electrical Instrument Corporation.**

John Heller, for a long time one of the directors of the **International Oxygen Company,** Newark, N. J., has been appointed sales manager.

The Carnegie Steel Company plans the expansion of its mill and the construction of seven new open hearth furnaces at Mingo Junction, Ohio.

O. D. Hays, district manager of the **Oxweld Railroad Service Company** with headquarters at Atlanta, Ga., has been transferred to the Southwestern district, with headquarters at St. Louis, Mo.

E. J. Costello, Jr., representative of the **Truscon Steel Company,** with headquarters at Pittsburgh, Pa., has been appointed sales engineer in the railroad department, with headquarters in New York.

The St. Louis Forgings Company, a subsidiary of the **Standard Forgings Company,** Chicago, has purchased the forging plant of the **Laclede Steel Company,** East St. Louis, Illinois and plans to expand the new plant.

O. D. Cleveland, New Orleans, La., has sold his equity and resigned as vice-president and a director of the **Equitable Equipment Company** of New Orleans. Mr. Cleveland expects to again enter the same line of business in the near future.

A. E. Huckins, vice-president of the **Burr Company,** engineers, founders and machinists, specializing in the manufacture of dynamometer apparatus for railways, with headquarters at Champaign, Ill., has resigned. This company has also discontinued its Chicago office.

Frank W. Edmunds, for the past several years eastern representative at New York City of the **Sunbeam Electric & Manufacturing Company,** Evansville, Ind., has severed his connection with that company effective January 1. Mr Edmunds' address is West Nyack, N. Y.

The Ideal Cement Company, Denver, Colo., will construct a cement plant at Fort Collins, Colo., which will have two kilns with a capacity of 3,500 bbl. a day. Steam for the plant will be generated by the waste heat from the kilns, the initial fuel being natural gas from local gas wells.

The Brown & Sharpe Mfg. Co., Providence, R. I., at a recent meeting of the stockholders, elected the following officers: **William A. Viall, Henry Buker** and **Paul C. DeWolf,** vice-presidents; **John A. Cave,** secretary; **John Sharpe Chafee** and **Richmond Viall,** assistant secretaries. **Henry D. Sharpe** continues to hold the office of president and treasurer.

Anton S. Rosing, assistant manager of the advertising and publication bureau of the Portland Cement Association, with headquarters at Chicago, has been appointed publicity manager of the **Armco Culvert and Flume Manufacturers' Association,** with headquarters at Middletown, Ohio. He will be in charge of advertising, publications and other publicity work.

Henry W. Darling, for more than 30 years treasurer of the **General Electric Company,** Schenectady, N. Y., resigned on January 1 and has been succeeded by **R. S. Murray,** who has been assistant treasurer of the company since 1910. In ac-

cepting the resignation of Mr. Darling as treasurer, the board of directors elected him a vice-president with such duties as shall be assigned to him by the president.

The Bethlehem Steel Corporation celebrated its 20th anniversary on December 10. During its 20 years of progress the management has adopted a policy, in acquiring new plants, of dividing and sub-dividing work so that each plant makes special steel products selected in accordance with the layout of the plant, the supply of raw materials and the market for the products. As a result, the corporation has an ingot capacity 60 times greater than it had in 1904 and only 8 times as many employees. In 1904 the entire ingot capacity, all of which was in one plant, amounted to 120,000 tons a year, while at the present time the capacity amounts to 7,600,000 tons, distributed among seven steel plants.

The Celluloid Zapon Company has absorbed the Zapon Leather Cloth Company, and is now operating under the name of the **Zapon Company.** Under the new name the business of both Zapon companies will be continued with the same ownership, same organization, personnel, manufacture and service as heretofore, under the name of the Zapon Company, with main offices in the Park-Lexington building, Park avenue at Forty-sixth street, New York City. Branch offices of both the Leather Cloth Company and the Celluloid Zapon Company will be maintained under the new name in Chicago, Los Angeles, New Haven and Detroit, while the railway sales division at 626 Consumers building, Chicago, also will be continued.

Manning, Maxwell & Moore, Inc., New York, has made the following changes in personnel in its sales organization, machinery department: **Joseph Wainwright,** district sales manager at Philadelphia, Pa., has been appointed eastern sales manager, with headquarters at New York; **D. M. McDowell** has been transferred from the New York office to the Philadelphia office as acting district sales manager; **W. A. Deems,** formerly master mechanic, Baltimore & Ohio Railroad, has been appointed sales engineer to cover eastern and southeastern territories. A new sales office has been opened at Los Angeles, Cal., with **J. Fontes** in charge of that office. **Thomas A. Rees,** formerly with Motch & Merryweather and the Treadwell Engineering Company, is now salesman at the Pittsburgh office. **James W. Barr,** formerly with the American Tool Works and the Van Dyck-Churchill Company and **Herbert S. Lester,** formerly with the Hendey Machine Company, are now salesmen at the New York office. The sales force at the Buffalo office has been increased by the addition of **C. O. Watson,** formerly of Syracuse, and **Henry I. Knickerbocker** has been appointed general office manager, machinery department in the New York office.

Ford Buys Belgian Rail

The Detroit, Toledo & Ironton recently purchased 10,000 tons of rail from Belgium. The Wall Street Journal Detroit Bureau estimates that this rail will cost $36.75 a ton at River Rouge if it comes by the all-water route or $40 if delivered by rail via Baltimore. The domestic price at Detroit is $46.72. The Wall Street Journal's item continues:

"In the $40 a ton figure for Belgian rails are included $6.28 freight from Baltimore, $2.40 duty, $3.50 ocean freight and a small inspection fee. This makes the price of the rails at the Belgian seaboard approximately $27.60 a ton, compared with the domestic mill price of $43."

Obituary

Henry W. Jacobs, formerly president of the Oxweld Railroad Service Company, Chicago, died on January 6 in Chicago.

William S. Estell, who retired as secretary of the Adams & Westlake Company, Chicago, in 1923, died on January 4 in Chicago, of pneumonia.

William P. Blair, vice-president of the National Paving Brick Manufacturers' Association, died in East Cleveland, Ohio, on December 23. He was educated at Earlham College, Richmond, Ind., and after graduating from college he studied and practiced law. Later he became interested in the use of brick as a paving material and engaged in its manufacture. He organized the National Paving Brick Manufacturers' Association about 25 years ago.

Frederick C. Riddile, general manager of the Edgewater Steel Company, Pittsburgh, Pa., died on December 21 at the Columbia hospital, Pittsburgh, after a short illness, at the age of 59 years. Mr. Riddile was born in Burgettstown, Pa. His early life was spent in Pittsburgh, and as a young man he entered the employ of the Oliver Iron & Steel Company, later becoming associated with the Latrobe plant of the Railway Steel Spring Company. He then went to Chicago Heights, Ill., as general superintendent of the Inter Ocean Steel Company and since the organization of the Edgewater Steel Company in 1916 he has been its general manager.

F. C. Riddile

S. D. Hutchins, representative of the Westinghouse Air Brake Company at Columbus, Ohio, died on January 5 in the Mt. Carmel hospital, following an operation. Mr. Hutchins was born at Cleveland on May 25, 1855. He entered the service of the Springfield, Mt. Vernon & Pittsburgh, now a part of the Cleveland, Cincinnati, Chicago & St. Louis, in 1871, as a fireman, and was promoted to engineman in 1873. On May 15, 1896, Mr. Hutchins entered the service of the Westinghouse Air Brake Company as assistant on its air brake instruction car, and in 1905 was promoted to the position of representative with headquarters at Columbus, which position he held until his death.

Safford S. DeLano, treasurer of the American Car & Foundry Company, New York, died at his home, 137 Riverside Drive, New York City, on December 27. Mr. DeLano was born in Waverly, N. Y., on January 24, 1856, and received his education in the public schools of Towanda, Pa. He entered the employ of the Michigan Car Company, Detroit, when sixteen years of age, and was advanced steadily until September, 1892, when a consolidation with the Peninsular Car Company was effected under the name of Michigan-Peninsular Car Company and he was appointed assistant treasurer of the new company. In 1899, upon the formation of the American Car & Foundry Company, the Michigan-Peninsular Car Company entered the consolidation, and in 1900 Mr. DeLano became a director and comptroller. In 1901 he was appointed treasurer, holding that office continuously until his death. He was also a director and treasurer of the American Car & Foundry Export Company and treasurer of the Sligo Furnace Company.

S. S. DeLano

Railway Construction

BALTIMORE & OHIO.—This company has awarded to the Vang Construction Company, Cumberland, Md., a contract for the elimination of a grade crossing at Ninth street, East St. Louis, Ill., to cost approximately $63,000. A contract has been awarded to the Tilt-Hargan Company, New York, for the construction of a substation at St. George, Richmond Borough, New York City, in connection with the electrification of the Staten Island Rapid Transit; cost, approximately $67,000.

DENVER & SALT LAKE WESTERN.—This company, a subsidiary of the Denver & Salt Lake, has applied to the Interstate Commerce Commission for a certificate authorizing the construction of a line from Orestod, on the D. & S. L., to Dotsero, Colo., on the Denver & Rio Grande Western, 41.3 miles, which the application states will shorten the distance from Denver to Salt Lake City, via the tunnel now under construction, by 173 miles.

ILLINOIS CENTRAL.—This company has plans for the construction of a large engine and car repair terminal at Markham Yard, Chicago. Seven buildings will be constructed, including a machine shop, enginehouse, powerhouse, wash-room building, locker building and storehouse. The contract for the construction of the foundations of the buildings and the laying of pipe lines has been awarded to Joseph E. Nelson & Sons, Chicago.

NEW MEXICO CENTRAL.—The Interstate Commerce Commission has made public a proposed report by Examiner Davis recommending a finding on this company's application that public convenience and necessity are not shown to require the construction of the proposed extension from Santa Fe to Gallina, N. M., 100 miles, on the ground that the prospects for an adequate traffic are speculative.

NEW YORK CENTRAL.—This company has awarded to Brackett & Colt, Inc. a contract for making connections from a lighting battery to its dc switchboard in Sub-station 1-A, New York City, at a cost of approximately $30,500. A contract for the construction of a passenger station at West Point, N. Y., to cost approximately $63,500, has been awarded to John Thatcher & Son. A contract for the installation of a boiler washing system at Brewster, N. Y., to cost approximately $27,160 has been awarded to the National Boiler Washing Company.

PENNSYLVANIA.—This company has awarded to the Mt. Vernon Bridge Company, Mt. Vernon, Ohio, a contract for the erection of the superstructure of a bridge over the Beaver river, Beaver Falls, Pa., to cost approximately $350,000. A contract has been awarded to the John F. Casey Company, Pittsburgh, Pa., for the construction of an under-grade bridge at Greensburg, Pa., to eliminate a highway grade crossing; cost, approximately $65,000.

SOUTHERN PACIFIC.—This company has awarded a contract to C. E. Crowley, Los Angeles, Cal., for the grading of the new main line from Picacho, Ariz., to Chandler, a distance of 50 miles. As reported in the *Railway Age* of July 12, the construction of this new main line is a part of the project of linking up the Arizona Eastern with the Southern Pacific, which includes also the construction of a main line from Hassayampa, Ariz., to Dome, a distance of 115 miles. The contracts for the latter part of the project have not been let.

TORONTO, HAMILTON & BUFFALO.—This company plans the construction of an eight-mile branch line from Welland, Ont., to Port Colborne at a cost of $150,000.

UNION PACIFIC.—This company is reported to be planning the construction of extensions to its machine shop and roundhouse at Nampa, Idaho.

UNION PACIFIC.—This company is constructing an ocean terminal at Portland, Ore., which will cost $375,000 when completed. The terminal includes a dock 1,071 ft. long with an average width of 135 ft. and a building on the dock, 96 ft. by 903 ft.

Railway Financial News

ALABAMA & VICKSBURG.—*Stock Dividend.*—This company has applied to the Interstate Commerce Commission for authority to issue $2,100,000 of additional common sock, to cover in part additions and betterments made out of income, to be issued as a 100 per cent stock dividend. It is the intention to continue paying 7 per cent dividend on the increased amount of stock in place of 14 per cent on the old stock.

Acquisition.—See article on another page entitled "Illinois Central Acquires Control of Southern Feeder Lines."

ATCHISON, TOPEKA & SANTA FE.—*Certificate for Operation.*—The Interstate Commerce Commission has issued a certificate authorizing the operation by this company of a spur of 4 miles extending westerly from Richgrove, Calif.

Dividend Raised.—The Atchison, Topeka & Santa Fe has declared a quarterly dividend of $1.75 on the common stock, payable March 2 to stock of record January 30, thus increasing the annual rate from 6 to 7 per cent. The company had paid 6 per cent from 1910 to 1924, inclusive.

ATLANTIC COAST LINE.—*Acquisition.*—This company has been authorized by the Interstate Commerce Commission to acquire and operate a line heretofore owned and operated by a lumber company, from Spring Hope to Rolesville, N. C., 22 miles.

ATLANTA TERMINAL COMPANY.—*Bonds.*—This company has applied to the Interstate Commerce Commission for authority to issue $200,000 of 20-year 5 per cent first mortgage bonds, to be guaranteed by and sold to the proprietary companies.

BOSTON & MAINE.—*Meet to Consider Loring Plan.*—Plans for readjustment of Boston & Maine finances recently presented to the voting trustees of the preferred stock by Homer Loring, chairman of the executive committee, as outlined in the *Railway Age* of December 27, page 1157, are being made the subject of discussion in Boston by a committee of representatives of the several groups of stockholders and bondholders. The committee has been organized at the request of the voting trustees to decide upon and carry out a plan for the readjustment of the road's finances.

The committee consists of Reginald Foster, vice-president of the New England Mutual Life Insurance Co.; Robert D. Brewer, treasurer of the Provident Institute of Savings; John R. Macomber, of Harris Forbes & Co.; James L. Richards, director of the New Haven and representing that road's large holdings in Boston & Maine common stock; Ex-Gov. Rolland H. Spaulding, Rochester, N. H.; Charles Francis Adams, representing the voting trustees; W. Rodman Peabody, Harry G. Stoddard, James H. Hustis (president of the Boston & Maine) and Homer Loring representing the Boston & Maine board of directors; William Endicott, of Kidder, Peabody & Co.; Edward Mulligan, president of the Phoenix Insurance Company of Hartford, Conn.; F. L. Higginson, Jr., of Lee, Higginson & Co.; Walter M. Parker, treasurer of the Manchester Savings Bank, Manchester, N. H.; E. B. Carney, treasurer of the Lowell Institution for Savings; F. I. Emery, treasurer of the Suffolk Savings Bank of Boston and George A. Gaskill of the Peoples Savings Bank of Worcester, Mass.

The committee held its first meeting in Boston on January 2. W. Rodman Peabody was elected chairman and empowered to appoint a sub-committee instructed to report back to a meeting of the general committee on Friday of this week.

Considerable opposition has developed to the Loring plan in various quarters. Presumably as a result thereof Mr. Loring has issued an additional statement reading as follows:

"The program for discontinuance of unprofitable mileage will not, in my opinion, work injury to the business life of the communities affected. Not so many years ago, before the development of motor transportation, it would have been impossible to cut away a large portion of the system without doing serious damage. Now, however, the motor bus and truck provide not merely an acceptable substitute but actually a superior form of transportation for the requirements of these sparsely settled districts.

"The B. & M. has no ambition to create a super-motor transportation system. Where private capital will step in and operate motor service, well and good. But, in any event, the road will undertake to see that no community is left without any transportation.

"I think the facts and figures clearly prove the imperative necessity of some major operation of the character contemplated. As I pointed out in my letter to the voting trustees, of the 2,450 miles of railroad in the

B. & M. system, 45 per cent, or more than 1,000 miles, handles only 3 per cent of the business. An analysis of our accounts covering some 300 miles of road shows the actual out-of-pocket loss to be approximately $880,000 a year. On some of our branch lines the taxes per mile are equal to more than half the annual gross revenues.

"Obviously the B. & M. management cannot sit complacently by in face of the drain. It is therefore proposed to cut off approximately 1,000 miles of line which can never hope to pay, following which the B. & M. will have a system of 1,200 to 1,500 miles capable of giving good service, reasonable rates, with low operating costs.

"The system as curtailed will abundently justify the expenditure upon it for improvements. From $20,000,000 to $30,000,000 will be required and can be profitably spent for this purpose during the next five years. The Boston terminals alone will need an expenditure of several millions. I am confident that this new money can be made to earn very largely in excess of its cost.

"Now as to the suggested readjustment plan. The formation of a general committee representing all interests in the B. & M. is a matter of public knowledge. This committee is wedded to no particular scheme of readjustment. Certainly it is not committed in advance to the plan which is outlined in my letter to the voting trustees. It seems perfectly clear that the best interests of the security holders will be conserved by a readjustment effected through a general committee acting for all classes of securities rather than by a number of partisan committees each striving for an advantage over the others. It is worth remembering that the reorganization of 1918 cost nearly $500,000.

"Of course the plan which has been outlined is far from perfect, but the imperfections and the inequalities as between classes of securities are such as can be easily adjusted in committee as they appear.

"Something has been said to the effect that no readjustment is necessary. This view it seems to me is flatly contradicted by the facts. Not only has the road $64,000,000 of maturities in the next five years, but these maturities are so spaced that no breathing spell will be afforded in which to build up credit of the road before another maturity is upon us. With existing B. & M. bonds, issues quoted at prices to yield as much as 10 per cent upon the investment, it is not apparent just how new securities can be sold except at a prohibitively low price.

"Bondholders who fear that an enormous prior lien mortgage is to be placed ahead of their mortgage are giving themselves needless concern. In the first place, the prior lien mortgage as proposed would be a closely restricted instrument permitting the road to issue a limited amount of bonds and only up to a conservative percentage of the cost of improvements. I would not favor issuing any of these bonds unless it became absolutely necessary. In other words, the purpose is to have at hand a vehicle for future financing but to make use of it only as a last resort.

"Continuing on the subject of the necessity or lack of necessity for a readjustment plan, the indicated earnings of the road for 1924 have been cited as evidence that reorganization is superfluous. These earnings we estimate at $700,000 after fixed charges, sinking funds and equipment installments. But it should be borne in mind that this is just about the margin by which the snow expense this year was less than that of a year ago. Moreover, we have enjoyed a very substantial saving on coal this year. In fact, broadly speaking, the B. & M. has had operating conditions in its favor in 1924, although it is true, of course, that passenger and freight business has been unsatisfactory.

"We hope freight traffic will improve with general business but passenger traffic is steadily declining. The passenger decrease in 11 months of 1924 was $1,632,000. It is doubtful if this lost business ever can be recovered and probably decline will continue until motor vehicles have reached the saturation point. The road must be placed in a position to offset decreasing gross earnings with profitable improvements which require new money. In my opinion without immediate credit, the B. & M. has not a fighting chance of becoming a financial success.

"I cannot subscribe to the view, that, because of the possibility of consolidation, no readjustment is necessary. In the first place, no consolidation affecting the B. & M. system is imminent. There is ample time to rehabilitate the road physically and financially. There is not the slightest doubt that as a sound and prosperous road with demonstrated earning power, the B. & M. would enter any future consolidation on vastly different terms than if weak and dependant. Our slogan should be: Rehabilitation before Consolidation."

CANADIAN NATIONAL.—*Executive Committee.*—In view of the considerable distances which separate many of the directors of the company from headquarters and their consequent inaccessibility on short notice, it has been decided to appoint an executive committee of the board consisting of the following directors and including the chairman: D. J. McDougald, J. Gill Gardner, E. R. Decary, G. A. Bell, Gerard G. Ruel, J. Stuart Rayside, Tom Moore.

The directors named on the executive committee will deal with such matters concurrently as may require attention.

CENTRAL OF NEW JERSEY.—*Dividend.*—This company has declared the usual extra dividend of $2 a share, payable January 15 to stock of record January 5.

CHICAGO, PEORIA & ST. LOUIS.—*Creditors Must File Claims.*—The creditors of the Chicago, Peoria & St. Louis, other than the holders of bonds and other obligations secured by mortgages, have been directed to file their claims with Charles B. Briggle, special master in chancery, at the county court house, Springfield, Ill., on or before March 2, 1925. All claims filed prior to this time will be regarded filed with Mr. Briggle.

CHICAGO, ROCK ISLAND & PACIFIC.—*Abandonment.*—This company has applied to the Interstate Commerce Commission for authority to abandon its line from Tecumseh to Asher, Okla., 25.19 miles.

DELAWARE, LACKAWANNA & WESTERN.—*Extra Dividend.*—An extra dividend of $1.00 has been declared in addition to the regular quarterly dividend of 3 per cent, both payable January 20 to stock of record January 2.

GREAT NORTHERN.—*Equipment Trust.*—This company has applied to the Interstate Commerce Commission for authority to guarantee $1,980,000 of 4½ per cent equipment trust certificates, to be issued by the Western Fruit Express Company, to be sold at 96.75.

GULF & SHIP ISLAND.—*Acquisition.*—See article on another page entitled "Illinois Central Acquires Control of Southern Feeder Lines."

ILLINOIS CENTRAL.—*Acquisition.*—See article on another page entitled "Illinois Central Acquires Control of Southern Feeder Lines."

MAINE CENTRAL.—*Bonds.*—This company has been authorized by the Interstate Commerce Commission to issue $4,000,000 of first and refunding mortgage 5½ per cent bonds, to be sold at not less than 97 and the proceeds to be used in retiring $3,123,000 of notes payable to the United States; also to reimburse the treasury for expenditures in retiring underlying bonds.

NEW YORK CENTRAL.—*Bonds.*—This company has applied to the Interstate Commerce Commission for authority to sell $709,000 of 20-year 6 per cent convertible debenture bonds, reacquired and held in the treasury, in aid of their conversion into stock.

NEW YORK, NEW HAVEN & HARTFORD.—*Subscriptions to New Issue.*—The directors in a letter to the stockholders, dated December 30, announced that the company had thus far received $15,024,100 in subscriptions to its 15-year 6 per cent gold bonds to be issued for the refunding of the $23,000,000 European loan, which falls due April 1, next. These subscriptions include those received from directors of the company, banks, bankers, insurance companies and New England industries.

"With the European loan refunded," the letter says, "there are no other maturities of consequence until 1930. Between 1930 and 1935 the company's indebtedness to the government matures, which your directors believe can be cared for in a satisfactory manner. Except for the indebtedness to the government, there are no important maturities until 1940."

NORFOLK & WESTERN.—*Equipment Trust and Bonds.*—The Interstate Commerce Commission has authorized an issue of $6,000,000 of 4½ per cent equipment trust certificates, to be sold at not less than 97. The commission has also authorized an issue of $6,000,000 of division first lien and general mortgage 4 per cent bonds, to be sold at not less than 88, to reimburse the treasury in part for expenditures amounting to $11,008,908. The company had asked authority for an issue of $12,000,000 of bonds but as the expenditures proposed to be capitalized do not equal this amount the commission deferred action on the remaining $6,000,000, which had not been sold, until the applicant shows that additional expenditures have been made for which it is entitled to draw down bonds.

READING COMPANY.—*Equipment Trust.*—This company has applied to the Interstate Commerce Commission for authority for an issue of $8,000,000 of 4½ per cent equipment trust certificates.

WABASH.—*Equipment Trust.*—The Interstate Commerce Commission has authorized an issue of $4,391,000 of equipment trust certificates, to be sold at not less than 98.8

Dividends Declared

Atchison, Topeka & Santa Fe.—Common, $1.75, quarterly, payable March 2 to holders of record January 30.

Boston Railroad Holding Company.—Preferred, 2 per cent, payable January 10 to holders of record January 1.

Central of New Jersey.—2 per cent (extra), payable January 15 to holders of record January 5.

Delaware, Lackawanna & Western.—3 per cent, quarterly; $1 (extra); both payable January 20 to holders of record January 2.

New York, Ontario & Western.—1 per cent, payable January 28 to holders of record January 8.

Norfolk & Western.—Adjustment preferred, 1 per cent, quarterly, payable February 19 to holders of record January 31.

Pennsylvania Company.—3 per cent, payable December 31 to holders of record December 23.

Trend of Railway Stock and Bond Prices

	Jan. 6	Last Week	Last Year
Average price of 20 representative railway stocks	81.77	79.91	61.51
Average price of 20 representative railway bonds	89.53	89.04	82.90

Railway Officers

Executive

James B. Akers, whose promotion to assistant to the vice-president of the Southern, with headquarters at Washington, D. C., was announced in the *Railway Age* of December 6, was born at Danville, Va., on March 16, 1884. Following his graduation from Washington and Lee University in 1904, Mr. Akers entered railway service with the Southern as assistant supervisor of the Asheville division, remaining with that company in the same capacity until September of the following year when he entered the service of the South & Western (now the Clinchfield) as levelman and transitman on location and surveys. On April 1, 1906, he returned to the Southern as transitman on the Asheville division and was later promoted to assistant engineer of the Middle district. He was promoted to acting engineer maintenance of way of the same district on August 20, 1911, and in October of the same year he was promoted to engineer maintenance of way, with headquarters at Knoxville, Tenn. On November 1, 1921, he was promoted to chief engineer maintenance of way and structures, Lines East, with headquarters at Charlotte, N. C., where he remained until his recent promotion to assistant to the vice-president.

J. B. Akers

F. H. Hammill, general manager of the Chicago & North Western, with headquarters at Chicago, has been elected executive vice-president of the Chicago, Rock Island & Pacific with the same headquarters, a newly created position. Mr. Hammill will have supervision over all departments. He was born in Rockford, Ill., and entered railway service as an operator on the Chicago & North Western in 1886. He was later appointed an operator and bill clerk on the Chicago, Milwaukee & St. Paul and subsequently was promoted to train dispatcher and to chief train dispatcher. Mr. Hammill was later appointed chief train dispatcher of the Galena division of the Chicago & North Western and in 1902, was promoted to trainmaster of the Iowa division. He was promoted to assistant superintendent of the Madison division in July, 1905, and in January, 1906, was promoted to superintendent of the Sioux City division. Mr. Hammill was transferred to the Northern Wisconsin division in November, 1906, and in November, 1907, was transferred to the Iowa division. He was transferred to the West Iowa division in May, 1911, and held that position until February, 1913, when he was promoted to assistant general superintendent, with headquarters at Boone, Iowa. He was appointed general superintendent of the Northern district of the Union Pacific in October, 1917, and held that position until March, 1920, when he returned to the Chicago & North Western as assistant general manager. He continued in that capacity until May, 1924, when he was promoted to general manager, which position he held until his recent election to executive vice-president of the Rock Island.

F. H. Hammill

Thomas M. Schumacher, president of the El Paso & Southwestern, has been elected executive vice-president of the Southern Pacific Company, with headquarters at New York, incident to the merger of the El Paso & Southwestern with the latter company. Mr. Schumacher was born on February 16, 1862, at Williamsport, Pa., and entered railway service in 1879 as a telegraph operator on the Atlantic & Great Western (now part of the Erie). He subsequently served as freight clerk, brakeman, fireman, bill clerk, cashier, chief clerk and contracting agent for various lines in the Middle West, and in 1891 was appointed chief clerk in the general freight office of the Union Pacific at Omaha, Neb. Three years later he was promoted to general agent at San Francisco, Cal.; in 1899 he was elected vice-president and general manager of the Continental Fruit Express and shortly after was appointed traffic manager of the Oregon Short Line. In 1906 he was appointed chief traffic manager of the railroads and industrial companies controlled by Phelps Dodge & Company. In 1909 he resigned this position to become vice-president of the Denver & Rio Grande and the Western Pacific. He was appointed assistant director of traffic of the Union Pacific-Southern Pacific System on May 1, 1910, and shortly thereafter resigned to become traffic manager of the American Smelting & Refining Company and allied companies and vice-president of the Nevada Northern and Bingham & Garfield. In 1912 he was elected vice-president of the El Paso & Southwestern, which position he held until his election to the presidency in 1917. From 1913 to 1916 Mr. Schumacher also served as chairman of the board of directors of the Chicago, Rock Island & Pacific.

T. M. Schumacher

Operating

J. H. Jackson has been appointed inspector of transportation of the Missouri Pacific, with headquarters at St. Louis, Mo., a newly created position.

T. D. Wickham has been appointed acting superintendent of dining cars of the Chicago, Rock Island & Pacific, with headquarters at Chicago.

Noel W. Smith, who has served for some time as special assistant to the Secretary of the Interior for the purpose of an investigation of the affairs of the Alaska Railroad, while on leave of absence from the Pennsylvania as assistant to the general manager, has been appointed general manager of the Alaska Railroad, succeeding Col. Lee H. Landis.

B. H. Horton has been appointed trainmaster on the New Mexico division of the Southern Pacific, with headquarters at Carrizozo, New Mex., succeeding **J. P. Nash,** who has been transferred to Tucumcari, New Mex. Mr. Nash succeeds **C. B. Eifort,** who has been transferred to the Rio Grande division, with headquarters at Douglas, Ariz., in place of **J. E. Murphy,** who has retired.

R. T. Walker, superintendent of the Shreveport division of the Southern Pacific Lines in Texas, has resigned. **B. H. McGuire,** assistant superintendent of the Shreveport division, has been appointed trainmaster of the Beaumont division, with headquarters at Houston, Tex. The Beaumont division has been formed through the consolidation of the former Beaumont-Galveston and the Shreveport divisions.

Mechanical

N. J. Boughton, engineer of tests of the Missouri-Kansas-Texas, with headquarters at Parsons, Kan., has been promoted to mechanical engineer, with the same headquarters, succeeding B. B. Milner, resigned.

J. E. Stone, assistant master mechanic of the Salt Lake division of the Southern Pacific, with headquarters at Sparks, Nev., has been promoted to master mechanic of the Salt Lake division, with headquarters at Ogden, Utah, succeeding **D. Hickey,** who has retired. **J. J. Keller** has been appointed assistant master mechanic of the Salt Lake division, with headquarters at Sparks, Nev., succeeding Mr. Stone.

Engineering, Maintenance of Way and Signaling

H. L. Bell, division engineer of Shreveport division of the Southern Pacific Lines in Texas, has been appointed assistant division engineer of the newly created Beaumont division, with headquarters at Houston, Tex.

J. R. Hickox, principal assistant engineer of the Chicago, Burlington & Quincy, lines west of the Missouri river, with headquarters at Lincoln, Nebr., has been promoted to hydraulic engineer of the system, with headquarters at Chicago, a newly created position.

Special

J. S. Cunningham has been appointed secretary of the board of pensions of the Southern Pacific, Pacific system, with headquarters at San Francisco, Cal., succeeding **A. F. Hess,** who has retired.

Obituary

R. C. Richards, formerly general claim agent and more recently chairman of the Safety First committee of the Chicago & North Western, who retired from active service in July, 1924, died in Chicago on January 3. Mr. Richards was born on April 6, 1855, at Chicago, and entered railway service in 1870 as an office boy in the office of the general manager of the Chicago & North Western. He was promoted to clerk to the general solicitor in 1872 and in 1878 was promoted to assistant solicitor. Mr. Richards was promoted to general claim agent, with headquarters at Chicago, in January, 1882, where he remained until his retirement from his duties as general claim agent in 1922. From 1922 until July, 1924, Mr. Richards held the title of chairman of the safety first committee. He was the originator of the "safety first" movement on American railroads, having begun his activities in that line some 15 years ago. The North Western's high standing in this movement has been due in large part to Mr. Richard's efforts.

R. C. Richards

Thomas J. Moran, general agent, freight department, of the New York Central, with headquarters at Buffalo, N. Y., died at his home in that city on December 23, following a short illness.

M. J. Carpenter, former president of the Chicago, Terre Haute & Southeastern, which is now a part of the Chicago, Milwaukee & St. Paul, died in Chicago on January 2. Mr. Carpenter was born on April 12, 1850, at Caledonia, Ill., and entered railway service in 1869 as a telegraph operator on the Chicago, Milwaukee & St. Paul. He later entered the service of the Chicago & North Western as a traveling auditor and subsequently served as storekeeper, cashier and station agent. Mr. Carpenter was then appointed division superintendent of the Chicago, St. Paul & Kansas City, now the Chicago Great Western, and left that company to become general manager of the Duluth & Iron Range, of which he was later elected president. He was subsequently elected president of the Chicago & Eastern Illinois and held that position until December, 1902, when he was elected vice-president and general manager of the Pere Marquette. In August, 1908, he was appointed receiver for the Southern Indiana and the Chicago Southern and in December, 1910, was elected president of the Chicago, Terre Haute & Southeastern, which was organized to take over the Southern Indiana and the Chicago Southern. In July, 1921, he was elected president of the Chicago, Terre Haute & Southeastern Corporation, the railway having been consolidated with the Chicago, Milwaukee & St. Paul. He remained in that position until his retirement a year later.

Edwin L. Lewis, passenger traffic manager of the Reading, with headquarters at Philadelphia, Pa., died in the Germantown, Pa., hospital on December 31. Mr. Lewis was born on September 17, 1882, and entered railway service as a stenographer to the general superintendent of the Central of New Jersey, remaining in that position until March 12, 1903, when he accepted a similar position in the office of the general passenger agent of the Philadelphia & Reading (now Reading Company) at Philadelphia. On June 1, 1906, he was appointed assistant chief clerk in the passenger department and on December 1, 1909, he was promoted to district passenger agent at Philadelphia. On April 11, 1917, he was promoted to assistant general passenger agent, which position he held until July 1, 1918, when he resigned that company to become assistant sales manager of the Packard Motor Company. On March 1, 1920, Mr. Lewis reentered the service of the Reading Company as general passenger agent and on April 1, 1922, he was promoted to passenger traffic manager, which position he held up to the time of his death.

E. L. Lewis

Wilmer C. Stith, traffic manager of the Terminal Railroad Association of St. Louis, with headquarters at St. Louis, Mo., died suddenly in that city on December 22. Mr. Stith was born at St. Louis on June 21, 1858, and entered railway service in August, 1877, as a messenger in the freight department of the St. Louis, Iron Mountain & Southern (now a part of the Missouri Pacific). He was promoted to assistant general freight agent of the Missouri Pacific in 1886, and continued in that capacity until 1890, when he resigned to become general freight agent of the Kansas City, Fort Scott & Memphis (now a part of the St. Louis-San Francisco), with headquarters at Kansas City, Mo. In 1892 he returned to the Missouri Pacific as general freight agent and in 1899 he was promoted to traffic manager, remaining with that company in that capacity until 1908, when he resigned to enter the service of the Waters-Pierce Oil Company as traffic manager, with headquarters at St. Louis. In 1911 Mr. Stith entered the service of the Terminal Railroad Association of St. Louis and later became traffic manager of that organization, in which capacity he was serving at the time of his death.